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Address.

OUR CRIMINAL PROBLEM FROM THE STANDPOINT OF CLASSIFICATION AND SEGREGATION.*

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It is our belief that the at present much agitated problem of prison reform has become more and more one for the medical profession to help in solving. Diagnosis of the individual delinquent is essential as a foundation for reform, and that diagnosis is being found to resolve itself largely into a medical and mental problem. It is true that environment and training are equally important factors, but without the fair evaluation of the physical and the mental sides, other factors cannot be estimated in proper proportion: As in medicine, a patient may recover without treatment or diagnosis, or the physician may administer the proper treatment in spite of a wrong diagnosis, so in criminalistics, "reform" may take place without the reformer's help, or, empirically, with the reformer's help but without the fundamental cause of his career being discovered. Nevertheless, as in medicine, the majority of cases of delinquency require treatment based on diagnosis, and that diagnosis calls for all the help which the combined forces of sociology, medicine,

psychiatry and psychology can give. To this end, laboratories should be established in our courts and in our correctional institutions.

Statistics of our Massachusetts penal institutions for the year ending Sept. 30, 1914, show the following figures:—

Of 25,820 prisoners sentenced during that time, 14,817, or 57.4%, had served more than one sentence. The total number of previous commitments was 92,443, showing an average number of over six sentences for each of the recidivists, or an average of over three sentences for each of the total number. These figures are taken in most instances from the unverified statements of the individuals themselves and represent a very conservative estimate of their previous court records. Such results, however, from methods of "reform" which have not been based on diagnosis are not encouraging.

As the result of study of 500 women—inmates of the Massachusetts Reformatory for Women—the problem has seemed to resolve itself into a question of permanent segregation, partial segregation and parole, rather than one of universal reform. The question becomes one of treatment of the individual rather than punishment for the kind of crime committed.

By permanent segregation is meant commitment to a "defective delinquent" or feeble-minded institution. This is for those defective individuals whose court record and history of immorality places them in a different class from the unsophisticated feeble-minded who represent at present the majority in our state institutions for mental defectives. Under the present "defective delinquent" law they may apply for

* To be read at the Annual Meeting of the American Prison Association, Oakland, California, October 9-14, 1915.

release once during the year, so that in case of improvement or of adequate means of caring for them in the home, their release would be possible. Such an institution, although separate from the schools already in existence, might be under the direction of the State Board of Insanity, as are the other institutions for the feeble-minded in this state. Of the 500 women studied there were 24.8% who were candidates for such segregation.

By partial segregation is meant a *truly* indeterminate sentence. The indeterminate sentence, in general use, would be more correctly termed an "indefinite" sentence. Strictly speaking, an indeterminate sentence should be without *maximum* or *minimum*. When a truly indeterminate sentence is adopted, an individual can be treated until his "convalescence" is sufficient to warrant release and can be returned to the "hospital" in case of a "relapse" or "re-infection."

The present indeterminate sentence, so-called, in this state, while it is a great improvement on the previous fixed sentence, is not long enough in many instances to give the patients sufficient time to recover from their "indispositions," especially when the indisposition is based on an adolescent condition of instability which may require years of careful supervision and treatment to cure. While a truly indeterminate sentence would be ideal for the majority of offenders, it seems indispensable in controlling that class of individuals who are socially inefficient but cannot be permanently segregated. Thirty-eight per cent. of the 500 cases studied seemed to need such control.

The system of indeterminate sentence and parole is at present in operation in over thirty states in this country. Such a system, to be truly effective, besides controlling the individual for a sufficient length of time should be based on a complete sociological study including the mental, the physical and the social aspect.

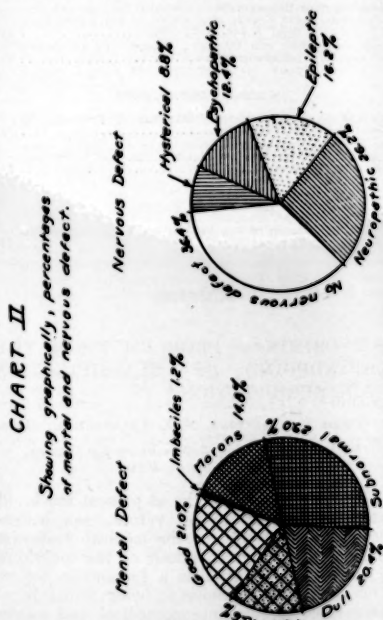
By parole is meant strict oversight outside the institution, with the understanding that the individual is to be returned if parole is violated. The parole class includes those who are eligible for release during the *present* sentence, which is a two-year indeterminate sentence for misdemeanors with a minimum of eight months, and a five-year indeterminate sentence for felonies, with a minimum of ten months. For these women the present system of legal procedure seems sufficient. This class includes 38.2% of the 500 cases.

The following charts explain in detail the basis for and the results of such a classification:

Chart I represents the general mental classification of the 500 women, while Chart II shows the same classification graphically. It will be seen that 16% show marked feeble-mindedness, while 29% show slight mental defect. This makes a total of 45% showing mental defect in some degree. 20.4% show poor native ability or are dull from some physical defect; 13.6% have

CHART I.
SHOWING GENERAL CLASSIFICATION OF 500 WOMEN.

	No Nervous Defect.	Neuropathic.	Psychopathic.	Epileptic.	Hysterical.	Total Number.	Total %.
Imbeciles	5					5	1.2
Morons	33	16	4	15	6	74	14.8
Subnormal	40	49	22	25	9	145	29.0
Dull	36	32	11	15	8	102	20.4
Fair	24	10	13	13	8	68	13.6
Good	44	24	11	13	13	105	21.0
Total No.	182	131	62	81	44	500	
Total %	36.4	26.2	12.4	16.2	8.8		100%



fair intellectual capacity, while 21% have distinctly good intellectual capacity. Thus 34.6% show good or fair mentality.

In connection with these percentages it is interesting to compare Dr. Goddard's tabulation of mental defectives in various reformatories, which range from 28 to 89%.

"From these studies," Goddard says, "we might conclude that at least 50% of all criminals are mentally defective."

On the other hand, Dr. Bronner has found in 500 unselected cases in the Juvenile Court in Chicago that less than 10% were feeble-minded, while those normal in ability exceeded 90%.

A second classification of the same 500 women shows the following nervous defects: 36.4% of

the 500 show no mental aberration or defect of the nervous system; 26.2% may be classed as neuropathic; 12.4% are psychopathic; 16.2% give a history of epilepsy; while 8.8% show manifestations of hysteria.

As neuropathic have been classed those women who show general nervous instability without manifestations of hysteria or epilepsy and with no history of marked "control defect" or psychopathic tendencies. Included in this class are cases of migraine and those who, having had chorea or meningitis or some brain injury earlier in life, still show nervous manifestations.

The term, "psychopathic individual," in our classification, in its *specific* sense refers to these borderline mental cases which show no underlying symptoms of epilepsy or hysteria, but present symptoms of depression, excitement, "control defect" or ideas of persecution, which do not form complexes definite enough to be classed as psychoses. As a *general* term it has been used to denote the "institution incorrigible" in contra-distinction to the dormitory type of the institutionally amenable, and in this sense includes *all* who evidence "control defect," whatever the underlying cause. About 4% of these cases have been confined in hospitals for the insane at some time during their lives.

The epileptics are proving more and more an important factor in our population. This is interesting in view of Lombroso's belief in the close relationship between the "instinctive criminal" and the epileptic. In 400 cases studied previously,⁸ there was a percentage of 12; in this 500—the last histories being much more complete than the first—the percentage had increased to 16.2. In the last 112 cases, in which special attention has been paid to epilepsy, both in history taking and in the outside investigation, and which perhaps included a larger percentage than usual, the following results have been obtained: 20% (23 cases) gave an unquestionable history of epilepsy; besides these, 9% (11 cases) gave histories of probable epilepsy.

In the families of the 112 cases, 45 other cases of probable epilepsy were found, 29 of which were unquestionable. In 10 of the 23 cases showing epilepsy in the individual herself, there was an average of two other cases in each family. In nine cases showing no definite signs of epilepsy in the individual there was epilepsy in another member of the family. These last cases giving a family history of it usually showed some characteristic symptoms, such as migraine or marked irregularity in the psychological tests and much instability in behavior.

According to this table, 32% of the epileptics show good or fair mentality, while only 40 cases, or 49%, show mental defect. This will prevent at least one-half from being candidates for permanent segregation as mental defectives. The majority of cases are having attacks of minor epilepsy only, at present, while many give only a past history of it, although the resulting instability is still markedly evident in their behavior.

This, however, would interfere with their segregation as epileptics even if the state should provide custodial care for epileptics with a criminal record. This it does not do at present. It will be seen how important a truly indeterminate sentence is in controlling such exceedingly unstable and dangerous individuals. A large percentage of the women who have to be disciplined because they do not conform to the rules of the institution comes from this class.

Cases of hysteria have been diagnosed as such only when definite symptoms were present, such as attacks of unconsciousness following fright, or areas of anesthesia and the absence of reflexes (palatal and conjunctival), etc. It is interesting to note in the comparison of mental with nervous defect that the nervous defect apparently outweighs the mental; that is, 63.6% show some nervous aberration, while only 45% show mental defect. This makes one realize how closely associated the subject is with the psychiatrist's field.

The above classification has been made with the assistance of the assistant physician, Dr. Elizabeth A. Sullivan, who comes into close contact with the women through both the physical and mental examinations. We are indebted to her for help, both in classifying and in charting the results.

The next three charts—III, IV and V—represent the detail of the three classes into which the 500 women have been divided:—

CHART III.
SHOWING DETAILED CLASSIFICATION OF CLASS I (GROUPS A AND B) WHICH NEEDS PERMANENT SEGREGATION.

GROUP A. INSTITUTIONALLY AMENABLE. 95 Cases or 19.0% of 500 Cases.						
	No. Nervous Defect.	Neuropathic.	Psychopathic.	Epileptic.	Hysterical.	Total Number.
Imbecile	5					5
Moron	28	13	3	11	4	59
Subnormal	9	14	2	6		31

GROUP B. INSTITUTIONALLY INCORRIGIBLE (PSYCHOPATHS). 24 Cases or 4.8% of 500 Cases.						
Imbecile		1				1
Moron		1	3	1	5	
Subnormal		12	5	1	18	
Total	42	27	19	25	6	119

Class I. This class (119 cases, or 23.8% of the total number) includes those who should be permanently segregated. Whether the cases are segregable or not has been estimated by judging the intellectual capacity, the social reactions and the resources for being protected in the outside world. As in insanity, a case has not been considered committable if it could be suitably cared for in the home. However, the fact that the woman has come to this institution usually

proves that the supervision was insufficient. Slight mental defect with a long court record has been considered as dangerous as marked mental defect with a short record, providing the outside resources for supervision have been the same.

All of the cases, however, which have been classed as "permanently segregable" show some intellectual defect. While it might be desirable to classify those cases as mentally defective which show social deviation but no apparent intellectual defect, in order to get custodial care for them under present conditions, still, for a differential study of causation, it would seem a great hindrance. If we are to judge by social record alone, 100% of the inmates of penal institutions are defective mentally. This, however, does not help us toward finding other factors equally important in "unclassified" cases which are at present being thrown on the general dump-heap of "defective delinquent."

Class I has been subdivided into two distinct groups, A and B.

(A) The first group includes those who are institutionally amenable and do not interfere seriously with the peace of any institution routine, in spite of various underlying factors, such as epilepsy, hysteria, etc. They can consequently be managed in large groups and can live in dormitories, both of which factors make their cost of maintenance a relatively small one.

The following case is illustrative of this group.

CASE 1. Class I, Group A. S. V. Age 26. Married; parents Italian; born in Connecticut. Offence.—Murder. No previous court record.

Family History. Father illiterate; earned \$7-8 a week in a bobbin shop (lowest possible kind of work). Mother living; can read and write; goes out by the day. Eight brothers and sisters; one brother at school for feeble-minded—an idiot. No family court record.

Personal History. She attended country schools from 5 to 8 in Connecticut. Came to a mill town in Massachusetts where she attended school until 13; was never able to remember what she learned. She worked in mills from 13 to 18, then married. She had a bad reputation on the streets before and after her marriage. Her husband was alcoholic and gambled. He deserted her and four years later she obtained a divorce. She later remarried, having known her second husband a year and a half before marriage. He was a man of good reputation, became suspicious of her behavior and accused her of immorality. She took a revolver which was in the room and shot him.

Physical Examination. Well developed and nourished woman; has an endocarditis which is compensated; has gonorrhea and syphilis. She has attacks of unconsciousness (major hysteria) whenever anything goes wrong. Imagines she sees husband at night when depressed—is very unstable. However, no evidence of a psychosis has been found at any time.

Mental Examination. According to Binet, is eight years old mentally. Has attended school for six years, but reads and writes with difficulty. Knows no arithmetic. According to all tests she is a feeble-minded individual.

Disposition of Case. Although she has hysteria and is frequently in difficulty in the institution, still she is amenable, as far as her mentality will allow, and should be classified in the "institutionally amenable" group to be permanently segregated. This should be enforced even in the face of a possible pardon.

(B) The second group includes the institutional incorrigibles, who upset any institution routine. (Many of this class are scattered through our insane hospitals at present, under the diagnosis of "defective delinquent" and show no evidence of a definite psychosis.) They may show the same underlying factors as the previous group,—epilepsy, hysteria, etc., but the manifestations in their behavior are far more active. They exhibit violent temper, break windows and assault attendants and fellow prisoners. This class should be managed in small groups with the equipment of a psychopathic hospital, and the treatment should be a combination of education, therapy and discipline. They should be managed in groups not exceeding ten in number, and be cared for in separate rooms instead of in dormitories. This would, of course, increase the cost of their maintenance as compared with that of the previous group.

Havelock Ellis' in "The Criminal," written as early as 1890, gives an interesting chapter on "Emotional Instability," in which he shows that the students of criminology have long been familiar with the "periodic explosions" and "wild fits of maniacal violence" among women confined in prisons. These, he thinks, might also be regarded as an "exaggeration or vicarious form of orgy." It is encouraging to know that the types which form our greatest problem at present have historic interest,—criminologically speaking.

Case 2 would be included in this class.

CASE 2. Class I, Group B. N. A. Age 23; single; colored; born in Massachusetts. Offence.—Fornication. Previous offence, 1905.—Stubbornness; Sherborn 1912—Stubbornness.

Family History. Maternal grandfather and maternal uncles were excessively alcoholic. Mother is epileptic; father, living and well. There were eight children, six of whom died in infancy, causes unknown.

Personal History. Patient went as far as the second reader in school; can count to 100; was always erratic and destructive; has always had violent attacks of temper without provocation. Was committed to an industrial school in 1905 at 12 because she was unmanageable and stubborn. Had had for eight years previously received care as a State minor ward. At the industrial school made little advance in school work. Had a tendency to destroy things. Would torment little kittens, and was known to kill a chicken by pulling its head off. Was sullen and would torment and even threaten to kill her playmates. Was untidy about her room and person. Would build "nests" in her bed of any obtainable filth. When 14, was committed to a school for the feeble-minded. There she showed the same tendencies, and although she did good manual work, was very erratic and quick tempered. Was

excitable in the presence of men, dancing around, yelling, laughing and clapping her hands when she saw them; was easily excited to bad temper if criticized. Was cruel to other children, and several times struck attendants. When 17, was committed to a hospital for insane, where her behavior continued to be the same. Attacked other patients from jealous motives. Was very irritable, frequently scolding and threatening other patients. Six months later was transferred to another hospital for the insane. As her behavior there during six months apparently improved and her father was anxious to have her at home, she was released, only to be sentenced to Sherborn the following year on a charge of stubbornness. The same attacks continued, during which she was violent and sometimes threw furniture about and attacked officers. At the expiration of a two-year sentence, she was returned to the community, only to be sent back three months later on a new charge of fornication. This girl passed through five institutions in 10 years and was cared for by charity during a period of eight years besides. At the time of her commitment to the industrial school she had very little knowledge of immorality and was assigned to the "Innocent Cottage." When she returned the last time to Sherborn she stated with much glee that since going out she had learned to drink, and would now be as wise as her associates. She had visited the well known cabs. She had become pregnant during this time.

Physical Examination. A fairly well nourished and developed woman. A lesion in lung suggests an old tuberculous process. She has gonorrhea. Examination otherwise negative. Has had fainting attacks which were probably epileptic and occasionally has attacks of dizziness which are probably minor manifestations of epilepsy. The outbursts of temper undoubtedly represent psychic equivalents of the same disease.

Mental Examination. Attended school from 7 to 12, reaching only the second grade. Had further instructions at the industrial school and at the school for feeble-minded. Can do addition and subtraction, but is unable to do multiplication and division. Other tests for native ability show her to be a feeble-minded individual.

Disposition of Case. This woman, who undoubtedly requires custodial care, found no institution in the state where she could remain. She well represents the type which should be cared for permanently, although during her first sentence she would hardly have been a candidate for a defective delinquent institution. Some provision should be made for those cases with mental defect which are not insane, but which have abnormal mental traits besides their mental defect. Many of these individuals would become "delinquents" if not confined early enough, but earlier in their careers would be candidates for feeble-minded institutions on account of their mental defect even though they manifest abnormal mental tendencies.

The two groups should receive quite different treatment. That of Group A should correspond with the training already given in our model institutions for feeble-minded in Massachusetts. This should include educational and industrial work, with a fair amount of recreation, that their lives may be as useful and as happy as possible. Such an institution would be made, as far as possible, self-supporting. This would be a

great contrast to the present expenditure in the state, which is the result of irresponsible persons passing through our courts many times as they repeatedly return to penal institutions which, through their very nature, must have a high per capita cost. Their children, which they should never have been allowed to bring into the world, are being cared for, in the meantime, by the state.

CHART IV.
SHOWING DETAILED CLASSIFICATION OF CLASS II
(GROUPS A, B AND C) WHICH NEED A
TRULY INTERMEDIATE SENTENCE.

GROUP A.

INSTITUTIONALLY AMENABLE.
74 Cases or 14.8% of 500 Cases.

	No. Nervous Defect.	Neurotic.	Psychopathic.	Epileptic.	Hysterical.	Total Number.
Moron	5	1			1	7
Subnormal	20	30	6	8	3	67

GROUP B.

INSTITUTIONALLY INCOMMENSURABLE.
60 Cases or 12.0% of 500 Cases.

Moron			1		1
Subnormal		1	6	3	10
Dull		5	7	4	16
Fair		5	7	3	15
Good		4	7	7	18

GROUP C.

RECIDIVISTS.
56 Cases or 11.2% of 500 Cases.

Subnormal?	4	2			1
Dull	6	9	4	1	21
Fair	6	4	4		2
Good	3	6	2	1	12
Totals	44	52	31	38	25

Class II. One hundred and ninety cases, or 38% of the five hundred, include those who are quite as much a menace to themselves and to the community as the first class, but who do not seem to us to present sufficient excuse in their mental defect or their social record, to be considered candidates for permanent segregation. The only way in which this class can be fairly treated, both as a protection to themselves and to the community, is by having a true indeterminate sentence which should enable society to keep them under supervision for a number of years. Parole might be granted whenever it seemed advisable, but the women should be kept under close supervision and returned to the institution if necessary.

Class II has been divided into three groups,—A, B, and C.

Group A represents the defectives who belong to the institutionally amenable class. This group corresponds to Class I, Group A, but although these all show at least slight mental defect, there is not, as stated above, a long enough

record of immorality, or the outside supervision is too good, to warrant the case being presented to a judge for permanent commitment.

Case 3 belongs to this class.

CASE 3. Class II, Group A. W. F. Age 52. French-Canadian. Offence.—Drunkness. Seven previous arrests for drunkenness—four sentences, three probations.

Family History. One child died of spinal meningitis, another developed epilepsy after an attack of spinal meningitis. No other cases of alcoholism in family.

Personal History. Born in Nova Scotia, where she attended school from seven to twelve. She worked in a mill from twelve to twenty-one, then came to Lawrence with a cousin, and continued to work in a mill there. When twenty-four she married a man whom she had known for over a year. After they had been married for eight years and had been happy during that time, three of her five children died suddenly. She thinks that it was the loss of these children that made her begin to drink. Although her husband drank moderately, he was never arrested. She drank in neighbors' houses but was not arrested until she was forty-three years old. In spite of all her family and her priest could do she has drunk to excess continually since that time.

Physical Examination. Well nourished and developed woman with no venereal disease. Her teeth, which were in an unspeakably bad condition, have been attended to.

Mental Examination. According to Binet, she is less than 11 years old mentally. Attended school in Nova Scotia from 7 to 12 years of age, reaching the fourth reader. She thinks she was never smart in school and says she cannot do much arithmetic. She made one mistake in addition and failed to do subtraction, multiplication and division. Does not know the higher tables. Is unable to do easy practical problems. Other tests show her to be sub-normal mentally. Some of this defect, however, may be due to deterioration from alcoholic excess.

Disposition of Case. This woman, while quiet usually, is very disorderly when intoxicated. She has two daughters, both splendid girls, who, with the priest's help, have done their best to keep her straight. They begged to have her sent back as she went on a protracted spree as soon as she was released on parole. Her instability may be partly the result of the menopause. She has a very good home to which to return. Both of these factors considered with her slight mental defect, would prevent her from being a candidate for permanent segregation. It is necessary, however, to keep her under supervision until her period of instability may have passed. She, therefore, represents the need of a truly indeterminate sentence for slightly defective individuals.

Group B represents again the "institutional incorrigibles," but this group includes only those who show no intellectual defect and are, therefore, not considered permanently segregable. While segregation for this class may be possible at some later date, we do not believe that the classification of such mental types is sufficiently definite at present to permit it. The term "defective delinquent," used as vaguely as it is used at present, is not a definite enough

term for classification. It might easily include the majority of the inmates of our institutions. How are we to decide which ones are committable unless we use intellectual defect as a basis?

Case 4 is representative of Group B.

CASE 4. Class II, Group B. C. M. Age 37. Irish-American. Offence.—Drunkness. Previous court record.—Drunkness; 45 arrests; 16 probations; 29 sentences.

Family History. Negative so far as is known. Only one sister living, who is self-respecting and has a good reputation in the neighborhood.

Personal History. Born in Massachusetts, where she attended school until 13. Was always very nervous and hated to study. She finally left school because her younger sister went ahead of her. When 16, became intoxicated after taking something to drink for the first time from a young man with whom she had been associating. At the same time she acquired a syphilitic infection which became known to the family, causing much unhappiness. From that time on she has never been able to let alcohol alone for any length of time.

Physical Examination. A poorly developed and nourished woman. The Wassermann reaction for syphilis is negative, but there is a faint copper-colored rash on body. Bacteriological smear from cervix is negative for *Neisser* organisms. She has chronic gastric indigestion.

Mental Examination. According to Binet, she is 11 years old mentally. The results of tests for native ability are fairly good, although there is a great lack of concentration. During a previous sentence she was transferred to a hospital for the insane after a period of depression during which she attempted suicide. At other times she has disturbed periods when she will scream for several nights in succession, keeping everyone in the vicinity awake. During these periods of excitement she uses the vilest possible language, which she applies to everyone who comes near her. She throws everything around her room, although she has never been considered dangerous. She represents the manic-depressive type and even in her best periods is very unstable.

Disposition of Case.—She does not show sufficient mental defect to make her, in our estimation, a candidate for permanent segregation. She is, however, a dangerous woman in the community. She should be held on the indeterminate sentence, and if allowed out on parole, should be very strictly supervised. She belongs to the "institutionally incorrigible" group for partial segregation, i.e. a truly indeterminate sentence.

Group C includes those who have served three sentences or more and who show no mental defect or abnormality. Their record alone, however, has proved that they are incapable of caring for themselves in the community, and keeping out of trouble. Like all of the four preceding groups they are a great expense to the state, continually going in and out of institutions, seldom staying long enough for constructive work to be done with them and being, in the interim, a distressing element in the community. This group, in which mental defect or aberration cannot be considered a factor in the causation of delinquency, includes many who have been the product of wretched environment

or training. These two factors, however, have frequently been associated with *innate characteristics* which, although not criminalistic *per se*, in the environment in which the individuals have lived, have been partly responsible for the direction their careers have taken. On the one hand, one may find the non-resisting type, unable to resist customs about her, and craving sympathy and companionship as the normal individual does; on the other hand, one finds the aggressive type, with much more energy and physical temptation than it is possible for her to control or to express in her given environment. There are a few cases in this class in which no factors of heredity, environment or training can be found to account for the long record. However, we believe firmly that these cases show our own lack of understanding of mental and physical processes, and should be considered an "unclassified" group rather than be branded by the wholly inadequate and unfair title of "moral imbecile." As the science of criminalistics progresses, the "unclassified" group is rapidly becoming fewer in number—which is additional proof that such a classification was false.

Dr. Healey says with regard to this, after studying intensively over one thousand juvenile offenders, "We have been constantly on the lookout for a moral imbecile, that is, a person not subnormal and otherwise intact in mental powers, who shows himself devoid of moral feeling. We have not found one. Many cases have been brought to us as moral imbeciles, but they have always turned out somehow mentally defective or aberrational; or to be the victims of environmental conditions or mental conflict, and not at all devoid of moral feeling."

The following case (5) represents one of this type, who might first have been termed a "moral imbecile." Later, however, the underlying condition of minor epilepsy was discovered, which very likely was an important factor in causing her social instability.

CASE 5. Class II, Group C. H. P. Age 38. American; born in Massachusetts. Offence,—Forgery. Previous offences,—Forgery, 4 arrests; Larceny, 2 arrests; 4 previous sentences.

Family History. Parents were fairly well educated and respectable. They, with two brothers, have died. History otherwise negative.

Personal History. Attended school from 6 to 16, reaching the second year of High School. Took position as telephone operator at 17, and married three years later. Unknown to her husband, she forged several checks for small amounts without apparent incentive. After her husband's death, when she was 35, she continued this practice, working without known associates. The banks in all large cities have been warned against this woman, and her picture has been in wide circulation among the detective agencies.

Physical Examination. Fairly well nourished and developed. Has a positive Wassermann reaction but no specific history.

Mental Examination. According to Binet, she is

19 years old mentally (the highest age tested). Her intellectual capacity is apparently good, although she shows the irregularity frequently met with in the mental make-up of epileptics. She is decidedly neuropathic. Such a type might be considered "a moral imbecile" were it not for the later discovery of a history of epilepsy. This may well have been the underlying cause of her social instability.

Disposition of the Case. She belongs to the "recidivist" class and should be held on a truly indeterminate sentence, being kept under strict supervision if allowed on parole. The epilepsy in this instance is clinically a thing of the past and would not influence the immediate disposition of the case.

CHART V.
SHOWING DETAILED CLASSIFICATION OF CLASS III
WHICH IS ELIGIBLE FOR PAROLE.

GROUP A.

HARMLESS DEFECTIVES.

13 cases or 2.6% of 500 cases.

	No. Nervous Defect.	Neuropathic.	Psychopathic.	Epileptic.	Hysterical.	Total Number.
Moron		12				2
Subnormal	7	3			1	11

GROUP B.

"REFORM" DOUBTFUL.

70 cases of 14.0% of 500 cases.

Moron						
Subnormal			1			1
Dull	17	10	1	5		33
Fair	3	4	3	3	2	15
Good	10	3	2	3	3	21

GROUP C.

"REFORMABLE."

108 cases or 21.6% of 500 cases.

Moron						
Subnormal						
Dull	13	13	1	2	3	32
Fair	15	2	1	3	1	22
Good	31	15	3	2	3	54
Total	96	52	12	18	13	191

Chart V represents 191 women, or 38.2% of the 500 who are eligible for parole, not necessarily because of the hopefulness of their cases, but because they present insufficient excuse for a longer sentence than is the minimum for each offence. With the first or second offence and no abnormal symptoms, one can only give them another chance, although it may be certain from their attitude that they will soon become members of the recidivist class.

This class includes three groups, A, B, and C. Group A. Included in this group are a few defective individuals who are practically harmless and can be cared for sufficiently well in the home to allow them to go out on parole. Most of these are beyond the child-bearing period. This group, however, includes only thirteen individuals.

The following case illustrates this group:—

CASE 6. Class III, Group A. D. M. Age 49.

Married. Born in France. Offence,—Abortion; no previous record.

Family History. Unobtainable.

Personal History. Came to this country with her husband eight years ago. He is a stone mason and earns good wages. For the last few years she has apparently been doing illegal operations in the neighborhood. Her husband and she both deny this, but a girl who had had a miscarriage stated that D. had given her an instrument for that purpose. Another girl also made the same statement and the evidence was sufficient to convict her. While in the institution she has been quiet and industrious, although she is very childish.

Physical Examination. Fairly well developed and nourished. No venereal disease. Is at menopause, having had no periods for eight months.

Mental Examination. Is unable to read and write, even in French, although she attended a French school for four years. Other tests show her to be feeble-minded. She is very nervous and harmlessly excitable,—possibly a racial characteristic.

Disposition of Case. This woman has a husband who can provide a good home and is amply able to care for his wife. She is beyond the child-bearing age and will probably be harmless in the community. The fright of having been arrested and her husband's good sense will probably prevent any repetition of the former offence,—therefore she is eligible for parole as a "harmless defective."

A division has been made of the remaining 178 in this class into the two following groups: (B), those who appear so anti-social in their attitude and so wedded to undesirable habits of life that their return to society as responsible individuals seems a remote possibility; and (C), those who will probably prove responsible members of society. Although this is a wholly arbitrary division, it represents the opinion of those who have studied them over a period of many months and often years. We should like, here, to express our indebtedness to Miss Edith Stedman, who, at the time this classification was made, was in charge of the sociological department and was of great assistance in classifying the women from the social point of view.

Group B (the "reform doubtful" group) includes 70 women (14.0%). Case 7 is included in this class.

CASE 7. Class III. Group B. W. M. Age 17 Single; American, born in Massachusetts, Offence,—Larceny. No previous record.

Family History. Father, mother, sister, aunt and paternal grandfather had court records. All of these, as well as maternal grandmother, were excessively alcoholic. One cousin is at the Lancaster Industrial School and one at Lyman School for Boys. The home was a rendezvous for drinking and immoral people.

Personal History. W.'s father was a wanderer and deserted his family. Parents were alcoholic and fought continually. After the father left, the mother went to live with other men. Although W. is only 17, she is a sophisticated woman of the world and states openly that she thinks well of prostitution as a profession. She comes from a wretched neighborhood on the outskirts of a small city, where immorality abounds. She is attractive and in the

midst of adolescence, when popularity has unusual charm. She has known nothing in her life but immorality and apparently revels in it.

Physical Examination. General condition poor. She has gonorrhea, but so far has apparently escaped syphilis. The Wassermann reaction is negative.

Mental Examination. She attended public school from 7 to 14, reaching the fifth grade. She lost promotion twice on account of sickness. The results of her education are fair although her general information is very poor. Other tests show her intellectual capacity to be fair.

Disposition of Case. With seven years of immorality behind her and such temptation as she is bound to have outside, a girl of her inclinations, even if wholly removed from her former environment, presents little hope of a change in her habits of life. She has already become canny and worldly, and her good intellectual capacity seems to accentuate this rather than to lessen it. Although a change of attitude is always a possibility, in such a case as this, it is extremely improbable. We should class her among the less hopeful ones who are eligible for parole.

Group C. (the "reformable" ones) includes 108 women, or 21.6% of the total number. Case 8 is illustrative of this group.

CASE 8. Class III. Group C. O. M. Age 23. Married; Italian. Offence,—Adultery; no previous court record.

Family History. Father illiterate, worked in foundry in Italy. Mother dead, could read and write. One sister insane.

Personal History. Born in Italy; came to this country when 18, at the request of a cousin; was married 3 months later to an Italian who was immoral and abusive. After 9 months they were to return to Italy but he deserted her just before the steamer left. Because he did not send money to her in Italy, her father thought she could not be married, and when he found she was pregnant, turned her out of doors. She went to an aunt, where she met a man with whom she lived for two years. They returned to America after 7 months. He was good to her and supported her and two children which she had by him. (Her first pregnancy by her husband terminated in a miscarriage.) Finding herself in the same town with her husband some time later, she decided to return to him. (He in the meantime for three years had lived with another woman.) Her plan was to allow one of her children to remain with its father and to keep the baby herself. The husband insisted upon going to court, where they were all arrested. As he was the only one who could pay the fine of \$500.00, the other two served sentences for adultery. The sympathy of the court and probation officers was entirely with the woman rather than with the husband, who has a very bad reputation.

Physical Examination. A well developed and nourished woman with no venereal disease.

Mental Examination. Attended school in Italy from 3 to 13, reaching the fifth class. The results of her school advantages were rather poor. This may easily be due to the kind of school she attended. Although there may be some dullness, there is no evidence of mental defect. She is a good woman of the non-resisting type and without mental abnormality of any kind.

Disposition of Case. This case would seem to call for social adjustment. She certainly is eligible for parole, and it is a question whether or not she should ever have been sentenced to prison. She is consequently the reformable type of Class III.

Chart VI represents graphically the number of women included in each class. The average age of the three classes is as follows: Class I, 27.2 years; Class II, 31.1 years; Class III, 30.4 years.

It is interesting that as a class the most defective show the lowest average age. This would seem to be an argument against the classification according to age which has been suggested in various states,—their theory being that those women who are under thirty present the most fertile field for "reform."

Chart VII shows subdivisions of the three classes with the average of each division. It is interesting to note that the two classes showing psychopathic tendencies show a comparatively low age. Those in Group B of Class I average 26.4 years, as compared with 28.1 in the other group of the same class; while in Class II they average 23.7 years as compared with 29.1 and 40.4 years. The recidivists represent, as would be expected, the highest average, 40.4 years. The harmless defectives who are considered eligible for parole, have an average of 38.9 years, while the other two corresponding classes average 28.1 and 29.1 years respectively. Both the unreformable and the reformable groups in Class III average 26.4 and 26 years, respectively.



TOTAL
500 Cases

CHART VI

Showing classification of 500 women with reference to segregation.

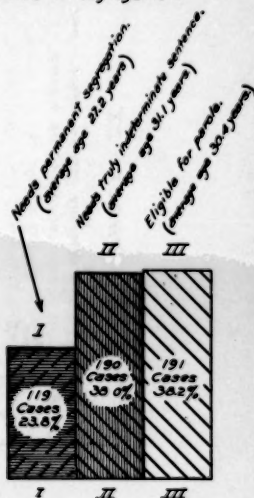
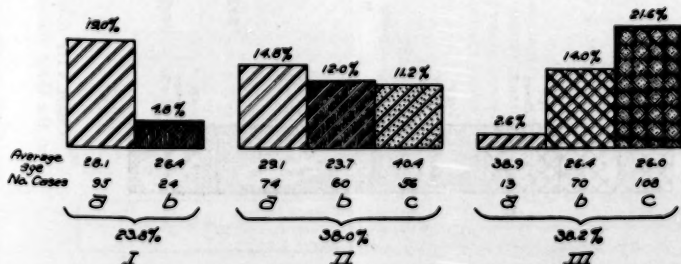


CHART VII

Showing subdivisions of each class.

- Class I** Needs permanent segregation.
 a Institutionally amenable defectives.
 b " " incrimible " -(psychopaths)
- Class II** Needs truly indeterminate sentence.
 a Slight mental defect. -(Institutionally amenable)
 b Psychopaths without mental defect -(Institutionally incrimible)
 c Recidivists -(without mental or nervous defect)
- Class III** Eligible for parole.
 a Harmless defectives.
 b Reform doubtful
 c Reformable.



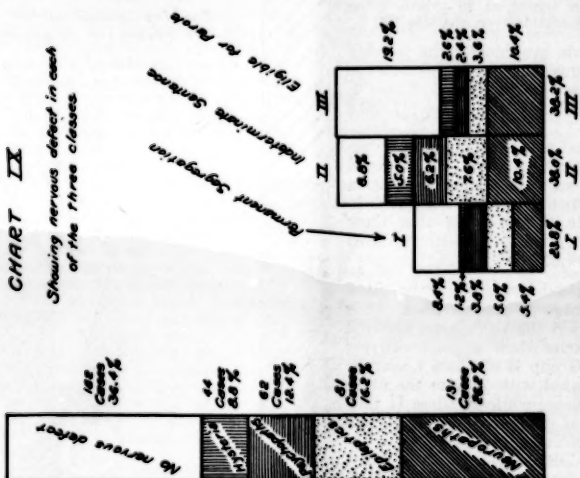


Chart IX shows nervous defect in the three classes. The highest percentage of nervous disease will be seen to be in the "Indeterminate Sentence Class."

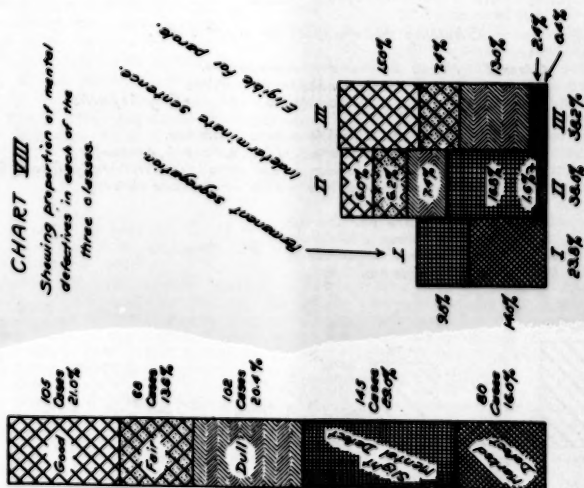


Chart VIII shows proportion of mental defect in the three classes.

CHART X

Showing percentage of venereal disease in each class.

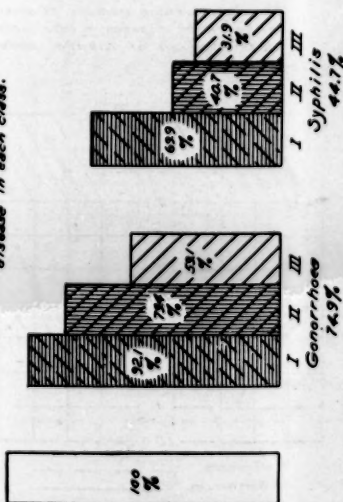


Chart X shows the percentage of venereal disease. This chart shows from a different point of view the relative danger to the community of the three classes. Gonorrhoea in the three classes is 92.1%, 79.4% and 59.1%, respectively, while syphilis is 69.9%, 40.7% and 31.9% respectively. The total percentage of gonorrhoea is 74.9 among the 500 women, while syphilis is 44.7%, with 9% more giving a doubtful Wassermann reaction.

CHART XI

Showing proportion of venereal disease in the subdivisions of the three classes.

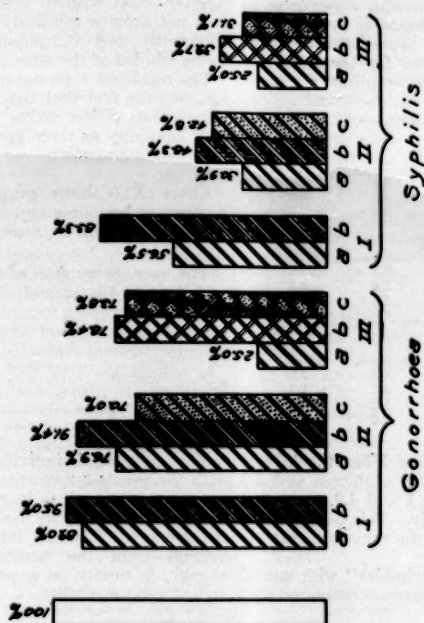


Chart XI shows in detail the prevalence of venereal disease in the sub-divisions of the three classes. It will be seen that the cases with psychopathic tendencies lead the others in the proportion of disease which they have acquired.

Through the Sociological Department, it has been possible to study the women with regard to the relative number and character of arrests in the various classes. We are much indebted to the members of this department for the assistance which they have given in compiling statistics.

The average number of sentences and arrests of the three classes is as follows:—

CLASS I.		
	Sentences.	Arrests.
Group A.....	3.1	4.9
Group B.....	4.6	6.9
Class average.....	3.8	5.9

CLASS II.		
	Sentences.	Arrests.
Group A.....	2.5	3.4
Group B.....	2.2	3.3
Group C.....	4.5	7.9
Class average.....	3.1	4.9

CLASS III.		
	Sentences.	Arrests.
Group A.....	1.2	1.5
Group B.....	1.1	2.1
Group C.....	1.2	2.1
Class average.....	1.2	1.9

It will be seen that Class I has the highest class average, averaging 3.8 sentences and 5.9 arrests, Class II having 3.1 and 4.9, and Class III 1.2 and 1.9, respectively. This demonstrates the relative menace which the various classes are in the community.

The "institutional incorrigibles" with mental defect have a very high average as compared with

that of the amenable defectives. The "incorrigible" class without mental defect, however, does not show a relatively high average, being apparently less dangerous than the slightly feeble-minded of the same class.

The recidivist class naturally has a high average, but the fact that they have neither mental nor nervous defect makes them a greater problem, especially as there appears to be no excuse for their segregation.

Chart XII shows graphically the average number of sentences and arrests in the various groups of the three classes.

The average number of sentences and arrests according to the mental classification is as follows:—

	Sentences.	Arrests.
Imbecile.....	2.2	3.2
Moron.....	2.1	3.1
Subnormal.....	3.7	5.7
Dull.....	2.5	4.3
Fair.....	2.1	3.7
Good.....	2.1	3.7

The subnormal individual stands out here with the greatest prominence. Her intelligence seems great enough to increase her temptations, while at the same time her inhibitions are below the average. The dull individual has a higher average than the moron who, interestingly enough, is nearly on a par with those of fair and of good mentality.

CHART XII

Showing average number of arrests and sentences in the subdivisions of the three classes

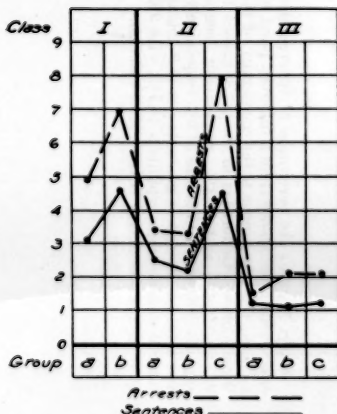


CHART XIII

Showing average number of arrests and sentences in the three classes, — also, according to the classification of mental defect.

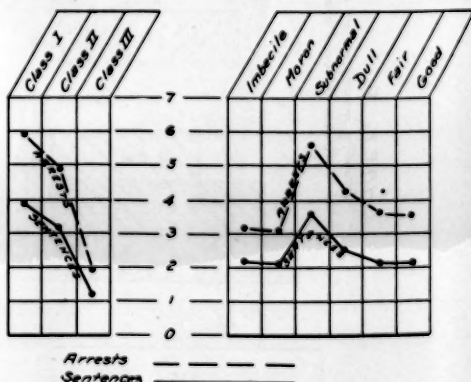


Chart XIII shows (1) the arrests and sentences in the three classes and (2) the same, classified according to mental defect.

The average number of sentences and arrests according to the classification of nervous defect is as follows:—

	Sentences.	Arrests.
No nervous defect.....	2.0	3.6
Neuropaths	3.9	6.2
Psychopaths	3.7	5.7
Epileptics	2.1	4.7
Hysterical	1.7	2.9

Chart XIV shows graphically such a classification.

Here it is noticeable that the highest average is in the neuropathic group, while the psychopaths follow closely—these two being considerably higher than any other group.

It may be of interest here to remember that the neuropathic group, besides cases of migraine, includes individuals who have had chorea or a meningitis or some brain injury earlier in life and still show nervous manifestations.

The offences, for which these women have been arrested, have been studied in a general way to determine the various kinds prevalent in the three classes. For this purpose four general divisions have been made:—

1. Alcoholism alone (21% of the 500 cases).

2. Offences against chastity, with or without alcoholism. This includes all offences which have a probable sex basis, such as stubborn child, vagrancy, common night walker, keeping disorderly house, lewdness, fornication, adultery, etc. (58% of the total number).

3. Offences against property, such as larceny, breaking and entering, forgery, etc. Many of these cases also have offences belonging to the first two classes. These are 15% of the total number.

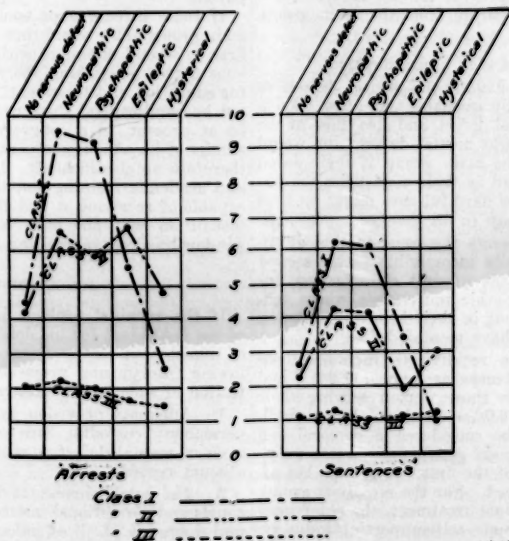
4. All remaining cases, including offences against the person, such as abandoning children, assault, manslaughter, etc. These comprise but 6% of the 500 cases.

The following figures show approximate percentages of these four groups in the three classes:—

Offences.	Class I.	Class II.	Class III.	Average.
1. Alcoholism alone.....	18	16	28	21
2. Offences against chastity... 67	58	58	49	58
3. Offences against property.. 12	21	21	13	15
4. Offences against the person, etc.	3	5	10	6

CHART XIV

Showing average number of arrests and sentences according to the classification of nervous defect.



The first interesting point is the apparently higher percentage of alcoholism in the third class. This is due, however, to the high percentage (71%) among the thirteen "harmless defectives" in that class.

Offences against chastity hold a very important place in the three classes (49.67%) and were actually at their height among the "reform doubtful" group of Class III. It is interesting to find the mental defectives showing such a slight increase in sex offences.

Offences against property appear highest in Class II, but actually show their highest averages in the groups where there is no mental defect. This is even more marked in cases of "offences against the person."

ADAPTATION TO PRESENT CONDITIONS.

The foregoing charts show the ideal disposition of the 500 cases studied. If laboratories could be established as clearinghouses in connection with our courts, many of these cases would never need to carry the unjustly imposed stigma of "prison," and could be sent directly to other institutions, where they would receive appropriate treatment.

In spite of the fact that such a laboratory has been started in our own municipal court in Boston, where excellent work is being done by Dr. Anderson, there is no defective delinquent or feeble-minded institution to which suitable cases can be committed. Until such an institution is established, these individuals must be cared for in the various reformatories to which they are committed. The resulting classification in this institution would provide for the care of three groups entirely separate from the main group.

Chart XV shows such a classification.

Group I would include the mental defectives of the institutionally amenable type; first, 14.6% with marked mental defect, and also those of the 21.8% showing slight mental defect, who would be a menace to the main group if their social record were too bad or their tendencies too undesirable. The less harmful ones might be kept with the main group to fill the easier positions.

Group II represents the psychopathic group or the institutionally incorrigible. This second group, 16.8% in the present classification, includes all psychopathic individuals whose tendencies are apparent in their behavior and who may or may not have mental defect.

Group III (the recidivists) includes those serving three sentences or more (11.2%) and might also include those women serving their second sentence (6.0%), if they, studied individually, should be considered a demoralizing influence for the main group.

The treatment of the first two groups has already been described. For the recidivist group, other than individual treatment, the chief need would seem to be some self-supporting industry,

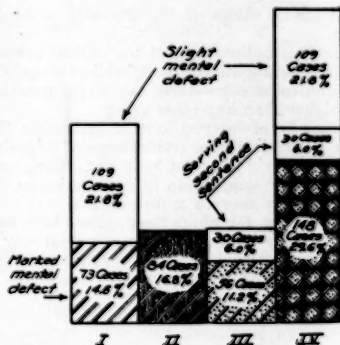
CHART XV

Showing classification necessary in institution.
I Amenable defectives.

II Psychopathic group - with or without mental defect.

III Recidivists - without mental defect, or nervous disease.

IV Main group.



which should bring returns to the individual herself. It might eventually be possible to form a self-supporting industry which could be continued under partial supervision for women on parole.

If these three groups could be removed, the main group (IV) would then be composed of the first or second offenders without mental or nervous defect, presenting the most fertile ground for education and treatment. This group would not be handicapped then, as it must necessarily be at present, in a congregate building which admits of no adequate separation of groups and therefore no classification. Industrial, domestic and academic training can then be given those capable of receiving it and the discipline of the institution will not have to be suited to the window-breaking, assaulting types.

CONCLUSIONS.

If the criminal problem is one of treatment of the individual for his deficiencies rather than of punishment for the crime committed, the following fundamental provisions for the administration of such treatment are necessary:—

1. Adequate provision by the state for the permanent custodial care of all committable cases of mental defect whether or not they have a court record.

2. The establishment of laboratories in our courts and correctional institutions for the study and diagnosis of all offenders.

3. The equipment of all our institutions with facilities for classification and treatment of the various types which will remain even after the removal of the most defective. Such a classification will necessitate separate buildings, at least one of which should be equipped for hydrotherapy.

4. The adoption of an indeterminate sentence, which shall enable us to treat patients until they are able to return with safety to the community.

The physician has it in his power to do much towards educating the public to the need of fundamental measures of reform and towards counteracting the tendency toward superficiality of some enthusiastic believers in *universal* reform. His knowledge of mental and physical defect enables him to see more than the cross-section of the subject, which is represented by the population at present confined in our penal institutions, and to appreciate the social and economic waste which is the result of our past neglect of generations of inefficient in the community.

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Original Articles.

BLOOD PRESSURE DETERMINATIONS, URINARY FINDINGS AND DIFFERENTIAL BLOOD COUNTS IN A GROUP OF 662 YOUNG MALE ADULTS.

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THERE are apparently few absolute standards for the normal in clinical medicine. Our tentative standards are constantly undergoing readjustments. Furthermore, it seems true that physicians as a class are better acquainted with disease and its variations than with health and its variations. The physical examination of any large unselected group offers an opportunity of testing the standards now recognized for that group. In the physical examination of the entire freshman class at Harvard University, in addition to the usual visceral examination, observations were made on the blood pressure, systolic and diastolic, in both the recumbent and

standing positions; a complete urine analysis was made in each case; and a blood smear was taken, stained with Wright's stain and differential counts of the white corpuscles were made. This paper is based on the findings of a single examination.

There were 662 freshmen, the average age 18, average height 5 feet, 8 inches, average weight without clothes, 143 pounds.

Blood Pressure. Blood pressure determinations were made both in the standing and in the recumbent positions. The instrument used was that of Tyco's. The method was the auscultatory method. The diastolic reading was made at the beginning of the so-called fourth phase. These determinations are, of course, open to serious criticism on the ground of accuracy, but on the whole they correspond to the blood pressure determinations as taken as routine in most private and hospital practice. The average systolic pressure was approximately 120 mm. of mercury; the average diastolic pressure 80 mm. Arbitrarily, 140 mm. was fixed upon as the upper normal limit for systolic pressure and 100 mm. for diastolic pressure.

Increased Systolic Pressure. Eighty-five, or 12.8%, of the 662 presented systolic blood pressure readings over 140. The highest reading was 180. There were seven systolic blood pressure observations over 160, but there was only one case in which the systolic blood pressure was recorded over 150 both standing and recumbent. In 33 of the 85 cases the standing systolic blood pressure was over 140; the recumbent blood pressure was 140 or under. In 21 the recumbent blood pressure was over 140, while the standing blood pressure was 140 or under. In other words, considerable variation was found during the period of a single examination. While 85 showed a reading that might be interpreted as abnormal, in only 31 was the reading over 140 in both the standing and recumbent positions. It is of some interest that, while in general our readings followed the rule that the systolic blood pressure standing is somewhat higher than in the recumbent position, yet the reading was frequently the same in both positions, and occasionally, as in 21 of the 85 cases, the blood pressure was higher in the recumbent position than in the standing position. There were no systolic readings below 100 in both positions. An occasional reading in one position of 90 to 100 was found. The lowest reading was 80, in a youth standing who felt faint. A few minutes earlier and later the reading was 120.

It has been impossible to repeat the examination of this entire group. All of the cases of systolic blood pressures over 160, all the cases with diastolic pressures over 100, and all but two with an association of albuminuria and hypertension have been re-examined. Eighteen of the 31 cases with both systolic pressures over 140 have been re-examined, and of these 18, 13 presented a normal reading at the time of the

second or third examination. The five cases giving persistently abnormal readings were a case of probable nephritis, a case of obesity, one case of albuminuria and two cases with valvular lesions of the heart. It seems apparent, therefore, that too much stress should not be placed on a single systolic determination of over 140, for in our series 54 out of 85 with an abnormal systolic reading over 140 gave at the same time in some other position normal readings. Subsequently, 8 more of the 31 cases gave readings within the normal limits. Abnormal blood pressure readings on a single examination are not necessarily associated with any demonstrable visceral lesion, but seem to be associated rather with the nervous disturbance attendant on examination.

Increased Diastolic Pressure. The diastolic pressures were found to be much more uniform. There was comparatively little variation between the readings in the recumbent and standing positions. The average was 80. Only five cases had a diastolic blood pressure over 100. All these five cases presented systolic blood pressures over 140, but only one of them presented a systolic pressure over 160. Of the five cases who presented diastolic blood pressures over 100, no other abnormality was found in three cases. These three cases gave normal readings on re-examination. In one case with a reading of standing systolic 150, diastolic 110, recumbent systolic 160, diastolic 115, there was a diagnosis of marked obesity. Repeated observations confirmed these readings. The fifth case, with a standing systolic pressure of 164, diastolic 132, recumbent systolic 158, diastolic 122, showed a slight albuminuria with a negative sediment, without apparent cardiac enlargement and with a negative past history. These findings have been confirmed on several examinations and a probable diagnosis of chronic nephritis has been made.

This group would seem to illustrate the value of the determination of the diastolic blood pressure since the diastolic blood pressure is much less subject to variation than the systolic blood pressure. Of the entire group there is only one case that shows the completed picture usually associated with chronic nephritis, and that one case presented the highest diastolic pressure.

Abnormal Blood Pressure and Urinary Findings. Of this group of 85 cases, 9 (or 10.5%) showed albuminuria. The percentage of albuminuria in the total 662 freshmen was 5.1%. The incidence of albuminuria among the cases with an apparently abnormal blood pressure is approximately twice as great as in the total group. In only one case with albuminuria was the systolic pressure in either the standing or recumbent position over 160. This is the case of probable nephritis. In two cases there were no further observations. One case had a persistently high systolic pressure and albuminuria, but he also had a chronic endocarditis, which

might well have explained the high blood pressure. Of the remaining five cases, the albuminuria cleared up in three and the increased blood pressure in five cases. In only one was there a persistently slightly increased blood pressure and albuminuria. Two of the cases with an abnormal blood pressure showed a temporary glycosuria. In both these cases on re-examination the sugar disappeared from the urine and the blood pressure readings were within the normal limit.

Abnormal Blood Pressure and Other Abnormal Findings. In seven of the 86 cases, a definite valvular lesion of the heart was found. One of these cases also presented albuminuria. In these cases it seemed reasonable to associate the increased blood pressure with the valvular lesion. In all the seven cases the heart was apparently compensated. Four of the seven had the classical signs of aortic regurgitation. In two more cases showing an abnormal blood pressure, apparent cardiac enlargement was found without adequate cause, either in the history, urinary findings or other examination.

In one case a slight goitre was present, which may or may not have been the cause of the apparently abnormal blood pressure. Another case of obesity presented a persistently high blood pressure. There are, then, 22 cases with an abnormal blood pressure reading which are associated with other lesions, leaving 52 cases in which no other lesions were found.

Albuminuria. Thirty-four of the 662 freshmen (or 5.1%) showed albumen in their urine. These 34 have all been re-examined and on the second examination ten of them were free from albumen, and the condition seemed transitory. In three other cases the albumen was definitely orthostatic inasmuch as repeated examinations showed that albumen was constantly absent in the early morning and fairly constantly present during the day. The amount of albumen varied. A positive test depended on a definite ring with nitric acid. Careful sediments were examined and casts were found in only four of the 34 cases. Three of those four subsequently became free from albumen. Eight of the 34 (or 20%) showed a systolic pressure over 140. Eighty-five of the total number examined (or 12.8%) showed a high systolic blood pressure. There was only one diastolic pressure over 100. This was the case of presumable nephritis. Three of the 8 cases with a slightly increased blood pressure, which was in only one case over 160, showed no albumen after the first examination. In none of these cases was there any other evidence of cardiac enlargement.

During the same time 275 other members of the University were examined in a similar way. Of these, 10 (or 3.6%) showed albumen, and of these 10 only one showed a systolic blood pressure of over 140 on a single observation. There were no diastolic pressures over 100. The urinary sediments from these cases in no instance showed casts and in no case was there

any evidence of cardiac hypertrophy. The majority of these cases were not carefully followed, but in two instances the albumen was temporary, in one it was apparently orthostatic, and in one it was always present, and had been known to be present for at least 10 years.

Glycosuria. Five cases showed sugar in the urine; in two cases the sugar immediately cleared up and has not reappeared. In one case there is occasionally a slight reduction. Two cases, however, showed persistent glycosuria even after moderate restriction of the diet. One case required very strict dieting before he became sugar-free; the other case became sugar-free on a moderate restriction of carbohydrate foods.

Glycosuria is much less common under the conditions of our examination than albuminuria. In two cases it seemed transitory and in one probably so. In two other cases the glycosuria apparently indicated some more or less permanent defect in metabolism.

Blood Examination. Blood smears were made in every case, and differential counts of the white corpuscles were made in 564. The main interest was to determine the presence of leucocytosis, lymphocytosis or eosinophilia. Recent reports by Cabot and others of lymphocytosis made us suspect that lymphocytosis would not be uncommon in the usual conditions of health. The usual, although somewhat unsatisfactory, classification of polynuclear leucocytes, lymphocytes, transitional cells and eosinophiles was followed. Only five cases presented a polynuclear leucocytosis of over 75%. Only four cases showed an eosinophilia of over 5%; the reasons for these were not apparent. Seventy-three cases showed a lymphocytosis of over 50%, but in no instance was the lymphocytosis over 60%. In 158 cases the lymphocytes were between 40 and 50% of the white cells. In other words, 231 of the 564 cases showed a lymphocyte count between 40 and 50%. It was a matter of surprise that no greater variations were found. The red cells were essentially normal in every case.

The result of our examination of the blood smears showed that there is little variation from the usually accepted standard in the differential count in the healthy young male adult. Our findings rather corroborated the view now generally held that the lymphocytes frequently approach 50% of the white corpuscles in the normal blood, and not infrequently, in 73 cases out of 564 (or nearly 13%), are over 50% of the white corpuscles; but in none of our cases did they exceed 60%.

General Conclusions. Among young male adults in the usual condition of health a single determination of the systolic blood pressure frequently gives readings that are regarded as abnormal according to the usual standards. This deviation from the usual standard may be considerable and may be present on several occasions. In the absence of other abnormal find-

ings moderate increase of systolic blood pressure seems to be of no significance. The diastolic blood pressure is much less subject to variation and is of considerable value in offering a control on an abnormal systolic pressure.

Albuminuria was present in 5% of this group, and in only one case was there additional evidence of a true nephritis. Albuminuria in young male adults may be permanent, orthostatic or transitory, and is apparently of no serious significance.

Glycosuria is unusual and in one case particularly, and apparently in another, was more than transitory and seemed associated with disturbed metabolism.

The differential counts of the leucocytes of the blood in this group confirm our accepted standard for the normal.

NOTES ON GASTRIC AND DUODENAL ULCERS.*

BY CHRISTOPHER GRAHAM, M.D., ROCHESTER, MINN.

THE questions often arise: Are there any symptoms or a group of symptoms whereby we may reasonably locate peptic ulcer? Do clinical histories, as ordinarily taken, give satisfactory evidence as to whether the ulcer be high or low? When the full evidence is before us we often feel that the picture is reassuring, and when reviewing histories taken by other clinicians, we find symptoms repeated so frequently that we have hopeful moments. However, after reviewing the histories of our own cases from 1906 to 1915, we cannot find any pathognomonic symptom, or combination of symptoms that clearly gives the coveted assurance, and we are forced to conclude that he who meets defeat again and again, in attempts at ulcer location will in time, even when the symptoms have met most of his requirements, come to feel less sure in his diagnosis than is comforting.

The clinical diagnoses in our series of approximately 1300 cases of operatively demonstrated duodenal ulcer during the years mentioned above have run about as follows: There were 702 (54%) cases primarily called duodenal ulcer, while 323 (24.8%) were classified as gastric ulcer. In another group of 107 (8.2%, repeated) gastric or duodenal ulcer was given as the secondary diagnosis, or was considered equally with the lesion in question as the cause of the complaint. One hundred seventy-five cases (13.5%) were primarily considered gall-stones (5% gall-stones alone), or gall-stones entered largely into the diagnosis (8.5%).

In 64 cases (5%) appendicitis (1% appendicitis alone) entered largely into the diagnosis, while cancer was considered in 1 1/2%. About 1% were quite unclassified.

Among the 450 cases of gastric ulcer operatively demonstrated:

* Read before the Marshfield Clinical Meeting, Marshfield, Wis., June 30, 1915.

actively demonstrated, 248 (55%) were classified as gastric, 119 (26½%) as duodenal, and 31 (6½%, 19 gastric and 12 duodenal) in which the gastric diagnosis was placed second. The gall bladder was primarily considered diseased in 40 (8.8%) cases and in 5% this was the only diagnosis made. Cancer was considered present in 4.8% of the cases, appendicitis in 1.7%, those not classified about 2½%. From these figures it will readily be seen why one hesitates in many cases to attempt to make a possible diagnosis as to the location of the ulcer. It is not a difficult problem to diagnose the presence of a peptic lesion, but it is quite difficult to determine whether the lesion is gastric or duodenal.

We have fallen into the way of roughly dividing gastric complaints into those of regular and of irregular types, and also of considering a gall bladder type. However, one must keep in mind extrinsic causes, such as gall-stones, appendicitis, and tuberculosis. These may give quite the regular gastric syndrome, and gastric symptoms be the chief complaint for which relief is sought, or they may very often give an irregular history, which confuses and leads to provisional diagnoses.

The following clinical syndromes are worthy of consideration:—

1. *The regular type of duodenal ulcer* is looked upon as that in which the pain or distress comes within two to five hours after meals, accompanied by gas, sour stomach and vomiting, one or all appearing about the same hour, and continuing until the next meal, or until food, an alkali, vomiting or irrigation brings comfort by relieving the acid state. These symptoms are repeated with certain uniformity each day for days, weeks or months, and then there is an intermission of perfect ease, or at least a marked remission ensues. These periods of attack and intermission may come and go for years, the only change, perhaps, being an increase in severity until the time comes when complications have altered the gastric movements and functions.

2. *The regular gastric type*, as we prefer to consider it, has the same periodicity and the same group of symptoms, though not so clearly cut as in the duodenal lesion, but, as we have shown, in at least one-fourth of the cases the difference is quite indistinguishable. Pain or distress comes sooner after meals, does not continue so clearly to the next meal, may cease for a time to begin again before the following meal, and is often eased by food, though not so often nor so clearly as the pain of duodenal ulcer. Fear of food-pain is more often noted. Food in small amounts gives ease, while in larger amounts it gives pain. Hunger-pain is not so clear cut, and not so frequent, because the pain may pass before mealtime arrives. Careful diet seems to give more relief than in duodenal ulcer, unless complications are present. Sour food is not so troublesome in the high as in the low ulcer, and the position of the body as well as

physical activity plays a more important ease rôle in the gastric than in the duodenal cases. A definite intrinsic gastric complaint runs throughout the history, though the features seem less clear cut than in duodenal ulcer, and one feels a greater lack of certainty in the diagnosis. However, the fact remains that the final diagnostic figures in this series hold clearly as well in the gastric as in the duodenal types.

3. *The irregular peptic ulcer type* of history has lost the distinctive time of onset of symptoms and their control. We find such histories in cases of obstruction, perforation with adhesions, hour-glass stomach, saddle ulcer, lesions of large areas, or any condition where function and movement are limited.

Intermissions or remissions are fairly constant, but not so well defined as in uncomplicated ulcer found low, or even usually those well above the pylorus. This type of history does not give that daily distinctive time of onset and control of symptoms which we expect to see during the period of an attack. They do not run that clear cut course, yet when considered day by day, and week by week, we discover in the so-called irregularity a certain definite course which clearly points to an intrinsic lesion of the stomach. Day by day the average is quite the same, though usually, the hunger-pains, food ease, and hemorrhages are less definite. However, pain, vomiting, distress, gas and sour eructation are the constant results of food intake, from which more or less relief is experienced by careful diet, alkali, irrigation or vomiting. These factors are always first in the patient's complaint, and are the ones most considered in the diagnosis. This irregular complicated type of history may be manifest from the first onset of symptoms, but often the early history, carefully developed, brings out the clear cut typical history which supplies the final diagnostic point.

Histories in cases of high ulcer tend earlier to this irregular type, those of pyloric and duodenal ulcer less often, and then usually when obstruction or other complications have intervened. Thus, in the so-called irregular types, we incline to the diagnosis of gastric rather than of duodenal ulcer, or we look for extrinsic causes. When gastric symptoms predominate we must always bear in mind these extra-gastric causes, whether they be general diseases or local conditions. At times the course of these extra-gastric lesions may be so typical of ulcer, even to the extent of hemorrhage, that ulcer is diagnosed, unconditionally. Fortunately, however, the day-by-day symptoms in these cases vary so much,—today this effect, tomorrow quite different, again a day entirely free, and through it all no change in diet or surroundings,—that one catches the hint and guards the diagnosis. With patients complaining of gastric distress it is necessary to be constantly on guard, always ready to differentiate the extrinsic causes that simulate the regular ulcer type, as well as to differentiate

those that seem to be of the irregular ulcer type, but are also as surely due to extrinsic causes. It is among the symptoms due to an extra-gastric condition, that many difficult diagnostic battles are fought and lost, or but partly won, and it is these same difficult battles that have taught us to hesitate before making a too spirited diagnostic charge at the real enemy.

When reading duodenal histories one is apt to be impressed with the array of so-called regular histories, and to feel that ulcers higher up are not nearly so clear cut. Yet in going over the histories from 1906 to 1915, we discovered that 72% of duodenal cases gave fairly regular symptoms and that 71% of gastric cases gave the expected syndrome, or were so clearly gastric that little hesitancy was felt in making a diagnosis.

Pain is the one constant diagnostic factor in all peptic ulcers. Less than 1% of patients are recorded free from pain. The character of the pain has few if any distinguishing points, and is described as: Distress, aching, burning, gnawing, pressing, boring, sharp cramps, colic, etc. It runs a similar course in all ulcers, though it resembles the pain in gall-stone cases more frequently in the duodenal group. The time of pain has some distinctive diagnostic significance. In the duodenal ulcers the pain came $\frac{1}{2}$ to 2 hours after food in 23% of cases, and 2 to 5 hours in 77% of the cases. In gastric ulcers the time limits of $\frac{1}{2}$ to 2 hours included 50% and 2 to 5 hours an equal number. In 20% of the duodenal and in 19% of the gastric ulcers the time of pain was not recorded. Eight per cent. of the patients with duodenal ulcer and 19% with gastric ulcer had pain within $\frac{1}{2}$ to 1 hour after eating.

Pain at night appeared to be more decidedly frequent in duodenal ulcer, while ease from posture (lying down) seemed decidedly more frequent in gastric ulcer. However, the final analysis gives 14% of the patients with duodenal ulcer and 10% of those with gastric ulcer having pain at night. Postural ease was noted in 8% of the duodenal and in 9% of the gastric cases. These figures correspond much more closely than one would suppose from impressions gained in history writing.

Continuous pain from the beginning of symptoms was mentioned in 4% of the duodenal and 9.5% of the gastric cases. Tenderness to touch was recorded in 41% of the duodenal and 40% of the gastric histories.

The location and radiation of pain was noted as follows: Of the duodenal ulcers 49% were well confined to the epigastrium, 52% of the gastric were similarly located. Those with radiation to the back ran 24% duodenal and 22% gastric. In the diagnosis gall-stones were considered certain or were given first place in 13% of the duodenal and in 9% of the gastric cases.

Radiation to the left epigastric area occurred twice as often in gastric (10%) as in duodenal cases (4%). The percentage of radiation to the

abdomen and fossae was quite similar (9.5% duodenal, 9% gastric). Radiation to right epigastrium was present in 6.6% of the gastric and in 13.7% of the duodenal cases. Therefore, tenderness to touch, radiation of pain, and the patient's ability to locate his subjective pain gave little basis upon which to arrive at a differentiation. The pain, as described by the patient, had much the same character in both the gastric and duodenal type, so much so that it gave but little clue to the location of the lesion. However, when ulcers were high there was some diagnostic foundation in the patient's ability to locate his subjective pain. In some instances the pain was quite to the left side or even well under the left arch.

Vomiting was recorded as occurring in 79% of the duodenal and in 82% of the gastric ulcers, while gas was present in 77% of the duodenal and in 94% of the gastric. With the vomiting and gas, sour gastric contents was quite constant in both types, though more troublesome in the gastric.

Control of pain, whether the lesion was in the duodenum, or above, ran quite the same and was as follows:—

Food or drink, or both, eased pain in 75% of duodenal, and in 66% of gastric ulcers. Vomiting and belching of gas had less distinguishing percentages, both giving marked ease. Ease from belching of gas in each was less permanent than vomiting. However, gas formation and belching were more persistent in patients with ulcers of the pylorus.

The effect of alkalis was practically the same wherever the location, i.e. ulcers above the pylorus were about as frequently (33%) eased as those in the duodenal area (38%). Irrigation gave about the same results no matter where the lesion (11% in duodenal and 9% in gastric), the advantage lying slightly in favor of the duodenal location.

Gastric hemorrhages may be of some diagnostic aid. In this series, history of hemorrhages by the mouth was recorded in 18.5% of duodenal and in 25% of gastric cases. Blood by the bowels was similarly recorded in 18% of duodenal and in 24% of gastric cases.

Perforation ran about equal in both classes (duodenal 28.7%, gastric 26%) and of those that perforated, the pancreas received the perforation in 17% of the duodenal and in 25% of the gastric cases. Pain to the back, which more or less simulated gall-stone radiation, ran about equal (24% duodenal, 22% gastric) in the two conditions, all cases considered. This clearly accounts for the wide range of suggestion of gall-stones in our cases with gastric lesions.

The effect of diet as usually prescribed for, or undertaken by, the patient, varied little so far as the comfort it brought to the two types of cases (20% duodenal, 22% gastric eased); but the amount, quantity, and kind of food at times so modified the gastric syndrome that their care-

COMPARISON OF CLINICAL DIAGNOSES IN CASES OF OPERATIVELY DEMONSTRATED
DUODENAL AND GASTRIC ULCERS.

1300 DUODENAL ULCERS.			451 GASTRIC ULCERS.		
CLINICAL DIAGNOSIS.			CLINICAL DIAGNOSIS.		
	Cases.	Per Cent.		Cases.	Per Cent.
Primary diagnosis, duodenal ulcer...	702	54.0	Primary diagnosis, gastric ulcer....	248	55.0
Primary diagnosis, gastric ulcer.....	323	24.8	Primary diagnosis, duodenal ulcer...	119	26.5
Secondary diagnosis, duodenal or gastric ulcer (repeated).....	107	8.2	Secondary diagnosis, gastric or duodenal ulcer (repeated).....	31	6.5
Primary diagnosis, diseased gall bladder (G. B. alone 5%).....	175	13.5	Primary diagnosis, diseased gall bladder (G. B. alone 5%).....	40	8.8
Primary diagnosis, appendicitis (Ap. alone 1-4%).....	64	5.0	Primary diagnosis, appendicitis.....	8	1.7
Primary diagnosis, cancer.....		1.5	Primary diagnosis, cancer.....	22	4.8
Unclassified.....		1.0	Unclassified.....		2.8
TIME OF APPEARANCE OF PAIN.			TIME OF APPEARANCE OF PAIN.		
One-half to two hours P. C.....		23.0	One-half to two hours P. C.....		50.0
Two to five hours P. C.....		77.0	Two to five hours P. C.....		50.0
One-half to 1 hour P. C.....		8.0	One-half to one hour P. C.....		19.0
Pain at night.....		14.0	Pain at night.....		10.0
Postural case.....		8.0	Postural case.....		9.0
LOCATION AND RADIATION OF PAIN.			LOCATION AND RADIATION OF PAIN.		
Epigastrium.....		49.0	Epigastrium.....		52.0
Radiation to back.....		24+	Radiation to back.....		22+
Radiation to left epigastrium.....		4.0	Radiation to left epigastrium.....		10+
Radiation to abdomen and fossae.....		9.5	Radiation to abdomen and fossae.....		9+
Radiation to right epigastrium.....		13.7	Radiation to right epigastrium.....		6.6
CONTROL OF PAIN.			CONTROL OF PAIN.		
Food or drink, or both.....		75.0	Food or drink, or both.....		66.0
Alkalis.....		38.0	Alkalis.....		33.0
Irrigation.....		11.0	Irrigation.....		9.0
Diet.....		20.0	Diet.....		22.0
Pain continuous from onset of symptoms.....		4.0	Pain continuous from onset of symptoms.....		9.5
Tenderness to touch.....		41.0	Tenderness to touch.....		48.0
Vomiting.....		79.0	Vomiting.....		82.0
Gas.....		77.0	Gas.....		94.0
Hemorrhage by mouth.....		18.5	Hemorrhage by mouth.....		25.0
Blood by bowel.....		18.5	Blood by bowel.....		24.0
Perforation.....		28.7	Perforation.....		26.0
Perforation into pancreas.....		17.0	Perforation into pancreas.....		25.0
Obstruction.....		26.0	Obstruction.....		10.0

ful consideration helped in the differential diagnosis.

Though apparently so nearly similar are duodenal and gastric ulcers in their final analyses, there are some points that aid in their differentiation. In the whole picture, the coming and going of symptoms are not so distinctly seen in gastric ulcer. The pain in the gastric form often comes earlier after food (within 1 to 2 hours, in one-half the number), and frequently ceases in a short time, or before the next meal. It may return after a brief intermission, to be eased by the next meal, or the distress is such that food is refused lest pain be increased. This is more often the case in gastric than in duodenal ulcer, unless complications are present. Certainly when adhesions and perforations are present in any ulcerative lesion, and clearly more so in those well above the pylorus, pain may begin sooner after food intake. This *early* pain is due apparently to peristaltic movements,

tugging at the sensitive adhesions, quite as much or more so than to any acid fluid acting upon the chronic ulcer or open wound.

In gastric ulcer a small amount of food more frequently gives ease, while large amounts give immediate pain, and thus, patients with gastric ulcer are not so apt to depend upon food to give ease, or to so spontaneously state its comforting effect. Acid foods trouble gastric cases less than they do duodenal (and pyloric) cases.

Position is also a greater factor in high than in low ulcer. Pressure, as bending over the arms of a chair, or doubling up on the thighs, gives ease more frequently or prevents pain setting in so severely. Lying on the back or side, or on the stomach, is more often found comforting in gastric ulcer. Therefore, night pain is not so frequent: (1) perhaps because obstruction is less liable in gastric cases (26% duodenal, 10% gastric), or at least the narrow-

ing is less; (2) because the ulcer by the position assumed is relieved of the acid's immediate presence; (3) by the high location of the ulcer the irritating fluid falls below the ulcer or is pressed away from it; and (4) peristalsis eases when the body is at rest, or when pressure is applied. This differential point of position is much more clearly felt in history taking than seems apparent in our final percentages and should, we think, be considered.

Ulcers located toward the greater curvature, ulcers with extensive surfaces, and many saddle ulcers tend to more constant symptoms, thus exhibiting the symptoms of chronic complicated ulcers situated elsewhere. Perforations and adhesions seem more often to affect gastric ulcers than duodenal and, as before stated, peristalsis plays a more important part in pain production when adhesions limit the normal movements.

Eruetation of burning sour-water (heartburn) or of tasteless or salty water (water brash) is more often mentioned by those who have gastric lesions. Also, bloating and its distress are more frequent in the cases of higher ulcers.

Pain that comes immediately or soon after food intake seems to point to cardiac, fundic or other extensive ulcerations, perforations, adhesions or obstructions. Coarse and large amounts of food may increase pain in any ulcer, but more constantly in gastric rather than in position, and high ulcers often seem to have periods of shorter duration (1 to 5 days) and shorter intermissions, or remissions which show a lighter grade of symptoms and tend to constant complaint. Thus the case may run month by month, pain earlier, not constant and decided food or soda ease; all symptoms varying somewhat as the amount and kind of food varies, giving one the impression of irregularity yet constantly of gastric origin. Duodenal or pyloric ulcers more often run an exact course day by day for days or weeks with decided food ease.

However, each case necessarily calls for its own careful consideration, because no symptom, or group of symptoms, can more than suggest location and often, as our histories show, the gastric case may have the pure duodenal syndrome and the duodenal case may quite as clearly give the gastric type of symptoms. The diagnosis of a gastric lesion being made, the question of its exact location is not paramount. How best to treat the lesion and conserve the patient's health is the vital point.

CASES OF INFECTIOUS DISEASES reported to the Boston Board of Health for the week ending Sept. 21, 1915: Diphtheria, 57, of which 16 were non-residents; scarlatina, 17, of which 5 were non-residents; typhoid fever, 18, of which 4 were non-residents; measles, 8; tuberculosis, 61, of which 3 were non-residents. The death-rate of the reported deaths for the week was 13.47.

Clinical Department.

THE USE OF CALCIUM IN THE TREATMENT OF EPILEPSY.*

By JOHN BRYANT, M.D., BOSTON.

[From the Neurologic Out-Patient Department, Massachusetts General Hospital.]

My share in the study of this unfortunate class of epileptics to which Dr. Clymer has referred, is an inquiry into the physical characteristics of the epileptic with regard to type, and into the relationship (if any) between disorders, organic or nutritive, originating in the gastro-intestinal tract or in the fuel supply, on the one hand, and on the other, manifestations of ductless gland disorder and disturbance of function of the nervous system.

One phase only of the observations in progress can be referred to in the brief time at disposal, and this concerns the metabolism of calcium. In addition to faulty heredity, overwork and undernutrition or malnutrition, seem with considerable frequency to precede the onset of the attacks. Prolonged periods of malnutrition at once raise the question of dietary errors.

The time has gone by when it is complacently assumed that man ingests sufficient of the necessary mineral elements, no matter what may be his diet. It is well known that many poverty rations, such as white bread and potatoes, are very deficient in calcium. Bunge, in his "Physiology," some years ago drew attention especially to the increasing use of alcohol and sugar as factors in the production of a calcium deficiency in the dietary of the poor, arguing that these substances satisfy appetite which otherwise would impel the ingestion of a larger proportion of calcium rich vegetables or fruits for the obtaining of the coveted sugars. It is also known that analyses of brain substance have demonstrated the presence in this tissue of less than the normal amount of calcium, in certain disorders marked by hyper-irritability of the nervous system; and recently Foote¹ has demonstrated a decreased calcium-content in the femur of an idiopathic epileptic. Thirdly, calcium has been used in such explosive conditions as tic and tetany with reported success, but hitherto apparently only to a limited extent in the treatment of epilepsy. Therefore it has seemed worth while in the course of other observations to see what effect, if any, its use would produce.

The results have in some cases been sufficiently striking to warrant mention in the hope that they may be checked up by other workers. The official syrup of calcium lactophosphate has been used in doses of 3i-ii t.i.d. either a.c. or p.c. Calcium bromide could, of course, be used, and it is planned to employ this later, but at first the calcium preparation was simply added to pre-

* Presented at a clinical demonstration at the Massachusetts General Hospital, June 8, 1915.

¹ Foote: *Boston Med. and Surg. Jour.*, 1915, Vol. cxxiii, p. 392.

existing medication without other change in the treatment. When thus used the calcium appears to produce at least three effects, in favorable cases; it promotes sleep, it decreases nervous irritability, and it acts in some measure as an antidote to bromide acne.

Favorable cases are those of *petit mal* type, which, according to Dr. Taylor, have hitherto been the least affected by bromides. Members of the clinic staff, familiar with the condition of some of the cases in question for months, if not years, before the present experiment commenced, have expressed themselves as struck by the sudden improvement in general appearance which has been displayed. Nearly all cases have shown some benefit, which may, of course, be partly a psychic reaction; but in a few cases it has been decidedly dramatic to note in the course of two or three weeks the change from surly and depressed irritability to a condition of apparent cheerfulness and regained faith in the future.

Calcium is not presented as a panacea. It may not cure any case, but it at least can be said that when added to existing only partly successful treatment by bromides, it has in some cases produced results sufficiently encouraging to make it seem desirable to mention its employment and possible value.

In closing, it is desired to focus attention upon a broader question related to calcium metabolism. It has been held that such manifestations, as for instance chorea, migraine, tic, tetany, and epilepsy, are absolutely unrelated disease entities. Proof is lacking. It is, on the other hand, not impossible that proof may be forthcoming to show that these diseases are, at least in some cases, merely different expressions of an underlying abnormality common to all, bearing to each other somewhat the same relation as do the visible and varying wave crests to the sea beneath. Three facts suggest that a lack of calcium may be such a common underlying factor in more than one of these conditions: many diets are deficient in calcium, calcium is deficient in the brain tissue of those afflicted with certain explosive manifestations, and some of these diseases have been markedly relieved by the administration of calcium.

These facts make it advisable to determine the extent to which a lack of the mineral constituents of the diet, and a lack of calcium in particular, may underlie the manifestations, not only of epilepsy, but of various other explosive disorders of the nervous system which have hitherto been looked upon as disease entities.

WALTHAM TRAINING SCHOOL GRADUATION.—The annual graduation exercises of the Waltham Training School for Nurses were held in that town on September 24. The principal address was made by Dr. Alfred Worcester, and Dr. C. Benjamin Fuller presented diplomas to a class of 17 pupil candidates.

SYNCHRONOUS INSPIRATION AND SYSTOLE IN A PATIENT EXHIBITING EQUAL RESPIRATORY AND PULSE RATES.

By PAUL DUDLEY WHITE, M.D., BOSTON.

[From the Medical Service of the Massachusetts General Hospital, Boston.]

An Italian boy of six years of age with partial heart block and probable miliary tuberculosis, was under observation for three weeks (April 7-26, 1915). Involvement of the lungs was indicated by the Roentgen ray. He showed on at least six occasions on different days equal rates of respiration and pulse with synchronous inspiration and systole. In the record made with the Mackenzie ink polygraph (Fig. 1) inspiration, represented by the downstroke on the respiratory curve, precedes the pulse at the wrist, represented by the upstroke on the radial curve, by a little more than one-fifth of a second. Deducting from this interval the length of time from the beginning of systole to the appearance of the pulse at the wrist, which is about 0.18 second, the onset of systole is seen to be almost synchronous with the onset of inspiration, following it by a small fraction of a second. This interval varied in different records taken, at times systole preceding inspiration by a like interval. Sometimes, when an irregularity of the block occurred (3 to 1 and 3 to 2, instead of 2 to 1) the radial pulse became irregular but the respiratory rhythm continued unchanged. Similarly, when the breath was held the pulse kept on at a steady regular rate; at such times a loud systolic murmur ordinarily heard over the precordia, disappeared, to reappear when the patient resumed his respiration. An electrocardiogram shows clearly the 2 to 1 heart block present (Fig. 2).

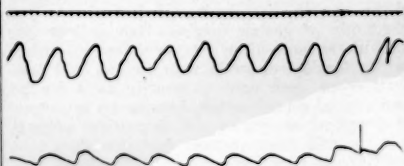


FIG. 1.—Simultaneous tracings of radial pulse (lower curve) and respiration (upper curve). In the respiratory record, downstroke = inspiration, upstroke = expiration. Time interval = 0.2 sec.



FIG. 2.—Lead I of electrocardiogram showing the presence of 2 to 1 heart block. The blocked auricular complex P' falls on the upstroke of the ventricular deflection T . Abcissa, 0.5 sec. Ordinate, 10-volt.

Reports of Societies.

CLINICAL CONFERENCE OF THE NEUROLOGICAL INSTITUTE, NEW YORK.

REGULAR MEETING, APRIL 29, 1915.

DR. J. RAMSAY HUNT, in the Chair.

CASE OF ASCENDING NEURITIS OF THE ULNAR NERVE.

DR. E. G. ZABRISKIE presented from the first division a case of ulnar neuritis in a woman, fifty-six, born in Germany. Occupation, housewife. In September, 1914, she ran a splinter into the outer surface of the left ring finger. Had a slight local infection which healed rapidly, so that in about a week was able to use the hand. From this time on, she noticed a slight numbness in the tip of the finger, but not until February, 1915, did this become very noticeable. At that time it extended to the root of the finger which began to contract and become stiff. This was followed by numbness extending up the arm, and at about the first of March she began to have severe pains in the palm, running up the forearm and into the shoulder. She can move the arm in all directions and there is no limitation of the movements of the elbow joints, but extension of the forearm causes pain in the elbow. She can close the fingers with great effort only.

Examination shows a pale, flabby woman with slight general emaciation. General examination is normal. There is aortic dullness to the right of the sternum and the first aortic sound is loud and rough. Examination of the right hand shows the fingers in a typical position of ulnar palsy. There is distinct tenderness all along the track of the ulnar nerve from the point where it passes over the medial condyle down to the wrist. The muscles supplied by the ulnar nerve are tender on pressure; there is distinct weakness of the interossei. There are no gross disturbances of cutaneous or deep sensibility. Pupils are equal and respond normally. Urine normal.

The interesting features of this condition lie first in the etiological factor; the most reasonable supposition is that we are dealing with a local infection of the terminal filaments of the ulnar nerve, with a subsequent ascending ulnar neuritis, but it is difficult to explain the lapse of time between the healing of the infection and the onset of the neuritis. But, because of the lack of other etiological factors, we are forced to accept this.

A CASE OF FROELICH'S SYNDROME WITH BLINDNESS AND CHOKED DISCS.

DR. JUNIUS W. STEPHENSON presented from the second division, a boy, twelve years of age, who two years previously began to have headaches. These headaches persisted, often being so severe as to keep him from school. There was also occasional vomiting, and during the past four months this has been rather frequent and severe. Eight weeks ago vision became affected and this progressed rapidly, until within six weeks there remained only a slight perception of light.

The patient was sent to the Institute by Dr. Dana, April 19, 1915, with immediate history as above stated. The history antedating his illness was uneventful except that he was considered a

"very large" baby and grew proportionately. Measles was the only infectious disease. The mother is a very large woman, weighing three hundred pounds. The father is said to have been "very large"; cause of his death not ascertained. He has one brother who is of large build.

The patient is very intelligent, and states that since the blindness, the headaches though persistent, are not so severe. He often refers to seeing "visions." His stature is large and somewhat flabby. The breasts are quite well developed and of the feminine type. The body hair is very scant. The testicles are undescended. The skin is dry and rough. He weighs 131 pounds.

The superficial and deep reflexes are all present, showing no abnormality other than at times a suspicious extensor plantar response on the right. Cranial nerves normal. The pupils are round, regular, widely dilated and yield only a slight response to light. Dr. Holden reports: Nystagmus to right and also quite marked when looking forward, when light is thrown into eye. Perception of light only. The disc shows papilledema with atrophy; elevation about five diopters.

The blood pressure has ranged between 110 and 120. Pulse 92-106. Temperature normal.

The serological examination of blood and spinal fluid was negative. W.B.C., 5200. Differential: neutrophils, 64; eosinophiles, 2; large lymphocytes, 8; small lymphocytes, 25; transitional I. Repeated urinalyses negative. The sugar tolerance was 500 gms. levulose.

An x-ray of the sella turcica was taken while a patient at the Flower Hospital, and the Roentgenologist has kindly reported the following: "Hypophyseal growth with erosion of sella."

Remarks. The general appearance of the patient, sugar tolerance and x-ray findings leave little doubt as to the location of the lesion causing the symptom complex. The one unusual finding is the presence of choked disc. This might be construed as evidence that we are dealing with a pineal growth and not a hypophyseal. However, we cannot say the patient has not at one time had a hemianopsia, and a pineal growth as large as the x-ray shows this to be (about the size of a hen's egg) would quite probably show some cranial nerve involvement, such as the fifth, and symptoms referable to the third ventricle. Nor would a pineal growth produce the physical stature or influence the sugar tolerance. After the conference it was decided to have performed a puncture of the corpus callosum, and right subtemporal decompression as palliative measures, while awaiting the influence of organotherapy.

April 7th, 1915: Operation by Dr. Elsberg. Puncture of the corpus callosum and right subtemporal decompression. Considerable fluid escaped under great pressure following decompression.

The headaches were considerably relieved. There has been no vomiting. Vision has not been influenced.

May 10th, 1915: Fundi show elevation of one diopter and post neuritic atrophy of the optic nerves.

The case is interesting because of features not usually encountered in hypophyseal growths with their consequent pituitary manifestations. The x-ray demonstrates a hypophyseal growth and the picture presented by the patient himself is distinctly pituitary, but instead of a primary optic atrophy (the usual phenomenon) we find an enormous choked disc. The evidence of increased intracranial

pressure is further corroborated by the operation, which demonstrated the ventricular fluid under great pressure and there was considerable bulging at the site of the subtemporal decompression.

Again the general picture of the patient—small stature, excess of adipose tissue, infantile genitalia, femininity, etc.—presents the clinical picture of Froehlich's syndrome, the unusual feature being that here instead of a primary optic atrophy our patient is developing a secondary atrophy as the result of the general increase in intracranial pressure. The natural assumption is that the tumor is growing upwards in the region of the third ventricle.

A CASE OF UNILATERAL ASCENDING SPINAL PARALYSIS;
REMARKS ON THE UNILATERAL TYPES OF SYSTEM
DISEASE.

DR. J. RAMSAY HUNT presented from the second division, a man, 38 years of age, single, occupation, clerk. His family history was negative and there was no history of antecedent disease or injury which might have a bearing on the affection from which he was suffering. He denied lues and is moderate in the use of alcohol.

Onset: Seven years ago, with weakness and stiffness of the left foot, which gradually progressed and ascended the left lower extremity. During a period of five years these symptoms were limited to the left leg and gradually growing worse. At the expiration of this time, the movements of the left hand also became weak and stiff, and gradually extended to the whole of the left upper extremity.

These symptoms developed in the most gradual and insidious manner, without pains or paraesthesiae. There had been no headache, vertigo, diplopia, or visual disturbances. The sexual power was diminished. The speech is unaffected. Of late, the right leg tires readily on exertion, but there is no stiffness and the patient regards the right side of the body as normal, and refers all his troubles to the left side—the leg being more affected than the arm.

Physical Examination: The man is well developed, stands in a hemiplegic attitude and walks with a markedly hemiplegic gait, dragging the spastic lower extremity with difficulty. The cranial nerves are normal. Pupils equal and react normally. There is no nystagmus, no weakness of the face or deviation of the tongue. Speech is normal. The optic nerves and visual field are normal. The spine shows a well marked scoliosis, compensatory in character. All movements of the spine are free and there is no pain or rigidity. There is a well-marked spastic paralysis of the left leg and left arm. The knee jerks are exaggerated on both sides, left greater than right. The ankle jerks are also greatly exaggerated, the left greater than the right. The arm jerks are exaggerated on the left side. The abdominal reflexes are present and diminished, the left less than the right. Cremasterics present and inactive, left less than right. The Babinski reflex is present on both sides. There is also ankle clonus on both sides. All sensations, both superficial and deep, are entirely normal. There are no evidences of local muscular atrophy or of fibrillary twitchings. Both legs measure the same below the knees, viz., 13¾ inches. The circumference of the right thigh measures 19 inches and that of the left 17 inches. This difference is due to a slight secondary atrophy of the left thigh (spasticity) and also to a compensatory hypertrophy of the muscles

of the right thigh, this compensatory hypertrophy being the result of the extra exertion required in swinging and dragging the paralysed and spastic left lower extremity. There is no oedema of the extremities and the pulsation of the pedal arteries is normal.

The urine is normal and the Wassermann test of the blood and cerebro-spinal fluid is negative. The spinal fluid contains no increase of cells or of globulin.

The clinical picture is limited to a spastic paralysis of the left leg and arm, of gradual development, which for several years had been limited to the lower extremity. The reflexes on the right side (ankle clonus and the Babinski phenomenon) also indicate a pyramidal tract affection, but without disturbance of the gross motor power or spasticity.

Remarks: This case was presented as an example of that rare clinical type, a *unilateral progressive ascending hemiplegia*, due to progressive degeneration of one pyramidal tract, and first described by Dr. Charles K. Mills of Philadelphia.

It is a lateral sclerosis of unilateral type, the chief interest of which is the diagnostic problem presented, together with the fact that a system disease, which in most cases is symmetrical and bilateral, may on occasion appear and for many years progress as a unilateral affection. Unless the possibility of such an occurrence is considered, it may give rise to considerable diagnostic uncertainty. While in this case the clinical picture is one of gradually ascending hemiplegia of seven years' duration, the pyramidal system on the opposite side also shows signs of beginning degeneration, viz., fatigue of the lower extremity on exertion; ankle clonus and the Babinski reflex, and there can be little question that as the disease progresses, the involvement of the opposite side will become more and more apparent.

In a case described by Mills and Spiller, with autopsy and histological examination, the course of the disease was for many years a progressive hemiplegia, but later the lower extremity of the opposite side became involved (Triplegia). Histological study showed an old unilateral degeneration of the pyramidal system, with more recent degenerative changes on the opposite side.

Some years ago a young woman under my care developed a progressive ascending hemiplegia and later a triplegia; for about five years the symptoms were limited to an affection of the pyramidal tract system. At the expiration of this time the muscles of the hands began to atrophy, and the case gradually merged into the clinical picture of amyotrophic lateral sclerosis. This case is of interest as showing that amyotrophic lateral sclerosis may also begin as a unilateral pyramidal tract disease (ascending hemiplegia) and similar cases have been reported by other observers.

In the earlier stages of the unilateral progressive hemiplegia, a tumor of the cord might be closely simulated, but the absence of pain and sensory disturbances should serve in most cases to eliminate this doubt.

It is of interest to recall a case recorded by Oppenheim of unilateral progressive ascending hemiplegia associated with homolateral sensory disturbances. In this case, Oppenheim made the diagnosis of combined system disease of unilateral type, so that the possibility of unilateral postero-lateral sclerosis as well as one sided lateral sclerosis must be borne in mind.

Not only is the unilateral progressive hemiplegia a symptom-complex of system disease, but it may also occur as an expression of multiple sclerosis, as in a case recorded by Potts. I have also observed, progressive ascending hemiplegia with homolateral slight sensory disturbances, very closely resembling the cases described by Oppenheim as unilateral postero-lateral sclerosis. Later, however, an autopsy revealed old lesions of multiple sclerosis in the spinal cord.

Of very special interest is the occasional occurrence of paralysis agitans as an ascending hemiplegia. The rigid form of Parkinson's disease without tremor is well-known and requires no special comment, but that this may occasionally assume a progressive hemiplegic form is not so well known, and has been emphasized by Patrick of Chicago. In such cases the motor disturbances assume the characteristic rigidity of Parkinson's disease and not the spasticity of pyramidal tract affections.

To summarize then: the unilateral ascending progressive hemiplegia is the unilateral expression of a system disease, such as lateral sclerosis, amyotrophic lateral sclerosis and postero-lateral sclerosis. It may also occur in the earlier stage of paralysis agitans, and like most other clinical types, may occasionally result from an unusual combination of the lesions of multiple sclerosis, and of cerebro-spinal syphilis.

CASE OF ATYPICAL PARALYSIS AGITANS, WITH LIMITED OCULAR MOVEMENTS.

Dr. THADDEUS H. AMES presented from the third division, a man, aged 62, with slowness of gait, a general rigidity of body and speech disturbance.

For about twenty months the patient has been suffering from a progressive loss of "cunning of the hand," and all of his movements have been slower and more awkward. He cannot bend over nor get up from a chair easily, and his gait has been slower. His head is stooped, his eyes staring, and his body rigid, so that as he walks in the street he is an object of attention. He has stuttered all his life, but in the past ten years the stuttering disappeared. For the last year the speech has been slow, monotonous and drawing. No pains, tremors and no trouble in swallowing. Never loss of consciousness. No sphincter trouble. Patient has been extremely constipated during the past twenty months. Previously he was regular.

Examination: Man of weight about 200 pounds. Stands in a stooped position, with head set, shoulders rounded. He walks in a stiff, awkward, slow manner. No festination. No tremors. No ataxia, nor incoordination of hands or feet; no cog-wheel motion of arms. No rigidity of joints. Paralysis of superior recti: right equals left. Slight nystagmus.

Vision: 20/40 in right eye. 20/100 in left eye. Fundi normal. Fields normal. Pupils equal, regular, round. Reaction slightly sluggish.

Speech: Slow, monotonous, drawing. No disturbance in the pronunciation of syllables. No trouble in swallowing. Hearing normal. Reflexes: K. J.'s present and equal. Achilles jerk present and equal. No Babinski. No Oppenheim. Blood pressure 150. Blood Wassermann negative.

Treatment: Patient has been given successively potassium iodide, thyroid gland, pituitary gland, parathyroid and cathartics, without any improvement.

NOTE (Two months later). The condition of the patient is progressively worse. The gait is slower and walking is more difficult. The body is held in even a more rigid position as he walks and stands. When he sits down he has more difficulty than before. He says that he has fallen to the ground a number of times in the past month because his thighs have become so weak, they could not support his body. He does not trip and fall.

The movement of the eyeballs is just the same. There is no rigidity of the arms or legs on rapid passive oscillations. At times, as he makes gestures, there is a momentary coarse tremor of the right hand, but this subsides at rest. This is not an intention tremor.

This case is presented as an atypical form of paralysis agitans, based on the stooped, rigid attitude with slowness of movements, the mask-like countenance and the character of the speech. There is, however, no typical tremor. The most puzzling feature of the case is the presence of the limitation of ocular movements. There is no movement whatever upward or downward of the eyeballs, though the lateral movements are normal. The eyelid movements are normal.

Book Reviews.

What Every Mother Should Know About Her Infants and Young Children. By CHARLES GILMORE KERLEY, M.D., Professor of Diseases of Children, N. Y., Polyclinic Medical School and Hospital. New York: Paul B. Hoeber. 1915.

This little book of about fifty pages "was prepared at the suggestion of a child's welfare organization. Its purpose is to place in the hands of the mother of moderate means, concise, readily understood and practical instructions for the care of her infants and young children." The advice given is, as is all the advice given by Dr. Kerley, reasonable, practical and easily understood. It should prove useful to those for whom it is intended. An unusual feature of the book is that the left hand page is left blank for notes.

The Starvation Treatment of Diabetes. With a Series of Graduated Diets as Used at the Massachusetts General Hospital. By LEWIS WEBB HILL, M.D., and RENA S. ECKMAN (dietitian), with an Introduction by RICHARD C. CABOT, M.D. Boston, Mass.: W. M. Leonard. 1915.

Any practitioner following the suggestions of this book will have greater success in the treatment of his diabetic patients than hitherto. Of course it would have been helpful if the number of cases which had been treated at the Massachusetts General Hospital under the observation of the writers had been mentioned and the results given. However, as it is, the book will be useful because it states in simple form the diets which may be followed by the patient.

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THE ORIGIN OF THREE DUBLIN HOSPITALS.

DUBLIN has long been famous for its hospitals, which are not only numerous, but, in many instances, of ancient foundation and, in one case at least, of international repute. There are ten general clinical hospitals in Dublin, with three lying-in hospitals, two hospitals for children, another for contagious diseases, an orthopedic hospital, an ophthalmic hospital, a dental hospital and several other special institutions. Of all these the Steevens' Hospital is the oldest, but the most famous is, of course, the Rotunda.

The Rotunda Hospital had its origin in the sympathetic and far-sighted energy of Dr. Bartholomew Mosse, who was born in 1712 in County Down, the son of an Irish clergyman. Making his resolution to study medicine, Bartholomew was apprenticed to Mr. John Stone, a surgeon of Dublin. Completing this apprenticeship in 1773, Mosse determined to enter the army and, after examination by Surgeon-general

John Nichols, who pronounced him a physician well qualified to practice the art of surgery, Mosse was given medical charge of troops in various British garrisons. In 1738 he went with a contingent to Minorca. Here he seems to have withdrawn from the army service, and after traveling for a time on the continent, he returned to Dublin, and in 1742 was admitted a licentiate of the Irish College of Physicians. By this time he had become particularly interested in obstetrics, an art then far more highly advanced on the continent than in Britain, and he realized the utter inadequacy of the care that could be given to the poor women of Dublin in their homes. He, therefore, undertook to raise the necessary funds to establish such an institution, and finally on March 15, 1745, first opened "an hospital for poor women in George's Lane." This first building of what afterwards became the Rotunda Hospital was a three-storied house, which, with an outbuilding, afforded accommodation for twenty patients.

The difficulty which now confronted Mosse, a difficulty which still constitutes the chief problem of most charitable institutions, was that of obtaining adequate means to maintain the hospital thus established. After the first interest of the public had worn off, sufficient funds could not be raised by mere private subscriptions, and Mosse showed great ingenuity in supplementing these by lotteries, theatricals, concerts, dances and other entertainments. He succeeded so well in fact, and his hospital immediately proved of such value to the community, that he was encouraged to plan a much larger and more ambitious building. The story of this new building, as told by Dr. Kirkpatrick in his admirable history* (reviewed in the issue of the *Lancet* for Feb. 14, 1914), is in part as follows:

"In August, 1748, he took upon himself the responsibility of a lease for three generations of four acres and one rood of land on the north side of Great Britain street, whereon to erect a lying-in hospital for at least 150 patients. He first laid out the grounds as public gardens, after the model of the Vauxhall Gardens, London, upon which he expended some £2000 of his own money, walling-in the grounds, erecting an orchestra, concert room, and coffee room, and planting trees and shrubs. Here he organized a series of entertainments with a view to producing a yearly income for the benefit of his char-

*The Book of the Rotunda Hospital. An Illustrated History of the Dublin Lying-in Hospital from its foundation in 1745 to the present time. By T. Percy C. Kirkpatrick, M.D., M.B.I.A., Fellow and Registrar of the Royal College of Physicians of Ireland. Edited by Henry Jelliet, M.D., F.R.C.P.I., Master of the Hospital. London: Adlard and Company. 1913.

ity. His expectations were not disappointed, and in fact to this day the hospital still draws a considerable income from the entertainment rooms and pleasure grounds established by him.

"The foundation-stone of the new hospital was laid on July 9, 1751. In December, 1756, a Royal Charter was granted. Mosse was appointed Master for life, and shortly afterwards a parliamentary grant of £6000 was paid over to the governors, less £180 deducted at the treasury in certain imposts.

"Nearly a year later a committee of the Irish House of Commons gave a further grant of £6000 for the completion of the hospital, and a benefaction of £2000 to 'Bartholomew Mosse, Master of the said Hospital, as a reward for his great Care and Diligence in Attending the Lying-in Hospital in *George's-Lane*, thirteen years, and superintending the new Hospital in *Great Britain-Street* nine years and a half, by which he hath greatly injured himself in his profession, and hurt his Family in their Circumstances, having never received any reward.' Thus, after the overcoming of stupendous difficulties the New Hospital, from designs by the great contemporary architect, Richard Castle, was opened on Dec. 8th, 1757, 12½ years after the establishment, as a private venture, of the original hospital in *George's-Lane*. At the time of the transfer from the old to the new hospital Mosse was able to report that 3975 women had been delivered in the old hospital, with a maternal mortality of 1.10 per cent, 'mostly of fever several days after they were safely delivered,' at a total cost of £3913 13s 0½d."

Unhappily Dr. Mosse did not live long to enjoy the fruition of his labors and to carry out his plans in the administration of the new institution. He died on February 16, 1759, and was succeeded as Master by Dr. Sir Fielding Ould. In his estimate of Mosse's character, Dr. Kirkpatrick says:—

"We find no trace of self-seeking in any of the work done by Mosse. His hospital was everything, and though he claimed honour as its founder, it was only through it and its success that he made any such claim. There is no evidence that he ever used the hospital for his own advantage, either in the way of making money by it, or to advance his professional reputation. Indeed, for the hospital he seems to have sacrificed his entire income and to have abandoned any hope of rising to professional eminence. But little evidence is forthcoming as to his private life, but such as there is seems to proclaim him a good husband and father and a generous friend."

It is evident that Dr. Mosse was a man of unusual personality, of energy, persistence and a genuinely charitable disposition, and the hospital which he established, later acquiring the

name of the Rotunda, has retained to this day the stamp of the individuality of its founder.

Older than the Rotunda hospital, in fact the oldest in Dublin, though not nearly so well known, is the Steevens' Hospital at Kingsbridge in the west end, an institution founded by Dr. Richard Steevens and his twin sister Grizell, children of the Reverend John Steevens, an enthusiastic Scottish Jacobite exiled to Ireland by the iron hand of Cromwell. Born in Athlone, Richard Steevens, after studying divinity for a time, abandoned it for medicine and, removing to Dublin, developed an extensive practice among the poor of that city. There were then no free dispensaries in Dublin, no charitable organizations except the churches, and not a single hospital. The need of medical relief and care was urgent. For years Dr. Steevens and his sister, neither of whom was ever married, devoted their labors and their private fortune to such ministrations as could be carried out in the homes of the poor. It was the doctor's dream to establish a hospital similar to those in the large cities of the continent, but he died in 1712 at the height of his popularity and activity as a medical practitioner without carrying his plan into execution. His sister Grizell, however, on the day following his death, made over to a board of trustees the estate bequeathed to her by her brother reserving for herself only an income of £150 a year. With this fund, the trustees purchased a suitable site near the southern bank of the river Liffey in the poorer quarter of the city and began to accumulate the necessary money for a building. In this there was considerable delay, but finally, in 1720, the first hospital ward in Dublin was begun. It was not completed, however, until 1733. By this time all the members of the original board of trustees had died and had been successively replaced by others, among whom may be noted the distinguished name of Jonathan Swift, then dean of St. Patrick's Cathedral, whose signature may still be seen in the records of trustees' meetings and in other archives of the hospital. The faithful Miss Grizell Steevens resided at the hospital and acted as its superintendent until her death in 1746 at the age of 93 years. In her time the capacity of the hospital was 40 beds, but it has since been enlarged to over 200. The original building, however, remains as the centre of the present institution, and in it are treasured the portraits of Dr. Steevens and his sister, the documents and other relics pertaining to the hospital's history,

and the living memory of the two faithful and devoted founders who, after years of self-sacrifice and endurance, established for the suffering poor of Dublin their first institution of charitable medical relief.

Neither so old nor so famous as the Steevens' Hospital or the Rotunda, Sir Patrick Dun's Hospital is one of the older and more notable hospitals of the city. Sir Patrick Dun, for whom it was named, was a native of Aberdeen. He was an army surgeon and was present at the battle of the Boyne where he is said to have treated the Prince of Orange for some slight injury. Subsequently Sir Patrick did not return to Great Britain but settled in Dublin, where he became a noted local practitioner and acquired considerable estates in County Waterford.

On his death in 1714, he left his property to the Irish College of Physicians to establish a library and to endow a professorship of medicine. For a century his estate grew rapidly in value so that in 1800 the accumulated income was sufficiently large to establish a hospital in Dublin which was named in honor of Sir Patrick. It was opened for patients in 1808 and enlarged to its present size in 1814. Since this time, however, the value of the Dun estate has steadily dwindled and the hospital has become dependent like others on public charity. In June, 1914, was observed the bicentennial anniversary of the death of Sir Patrick Dun and the centennial of the completion of his hospital; and at this time a considerable sum of the money was raised to constitute the nucleus of a new endowment fund. The hospital has always been closely associated with Trinity College Medical School and the majority of its staff are professors in that institution. Besides caring for the sick poor, therefore, this hospital has had a conspicuous part in medical education in Ireland. It now accommodates about 100 patients. There has recently been opened in the hospital a new ward to be used exclusively for wounded soldiers and sailors, the funds for which have been given by the County Wicklow Red Cross Society. Thus in its present, as well as in its past, Sir Patrick Dun's Hospital has maintained the military association appropriate to an institution deriving its name and origin from a distinguished army surgeon.

These three hospitals of Dublin, unlike the larger and more modern institutions of many cities, have thus a personality and distinction dependent on the circumstances of their origin.

They were not built and fully equipped at their outset with adequate funds derived from taxation or from large charitable gifts; but were conceived in the hearts of men and women who earnestly and sincerely desired to help their poor and suffering fellow citizens. They were dreamed of and worked for, suffered for, earned and brought to full development and usefulness only after years of effort and uncertainty. They are living institutions whose character represents the personalities and lives of those to whom their origin is due.

THE RELATION OF ENTAMOEBA TO MENTAL DISEASE.

It is now well-known that the condition of the teeth plays a not inconsiderable rôle in the genesis of gastro-intestinal disorders, and has an intimate relationship to general bodily conditions. The teeth as a focus for chronic infection are now given their just recognition. Much has been written on this subject in the past few years. It is not, therefore, surprising that the rôle of chronic focal infection, with the teeth as the *atria*, in the production of psychoses should be investigated and critically scrutinized.

We know only too well that many mental cases have poor teeth and inflamed, suppurating gums. So pronounced and so constant is this in many patients that it is logical to suspect that in some instances there may be a relationship other than coincidence or coëxistence between the mental state and the mouth condition.

With these ideas in mind, an investigation was recently undertaken by Sawyer and was reported to a meeting of alienists and neurologist held under the auspices of the Chicago Medical Society last July (see the official bulletin of the Chicago Medical Society for September 18, 1915). Thirty-five patients were examined, of whom 26, or 74.2% showed entamoeba, while 9, or 25.7% did not show entamoeba. There was a motley group of conditions found in these patients, but 50% were of the manic-depressive type. The general tendency in most cases was to depression. The treatment consisted, in all patients but one, of four hypodermic injections of emetin, one half a grain each day, plus general treatment consisting of hydrotherapy, massage, full meals, outdoor exercise, and other forms of medication. The author asserts that those patients who received emetin treatment in addition

to the general measures instituted responded more rapidly to these general measures after emetin treatment had been given than similar patients not treated by emetin.

His experience in this research leads Sawyer to draw certain interesting conclusions. Briefly enumerated they may be given as follows: Entamoebae are very common in mental disease. Entamoebae generally accompany poor teeth. It may be said that they are practically always present with suppurating gums. They seem to accompany depressed mental states in particular. Constipation is usually caused by these entamoebae, which may accompany other nervous lesions, such, for example, as multiple neuritis. It must be appreciated that mere removal of the entamoeba does not in itself cure the diseased condition, its function being limited to the cure or removal of the cause. In mental cases exhibiting depression, with poor teeth and suppurating gums associated, entamoeba should be sought, and if discovered, the emetin treatment should be administered, to be followed by general upbuilding therapy.

These findings by Sawyer are interesting, and whether or not entamoebae really have any direct relationship to certain cases of mental alienation, it certainly must be granted that decayed teeth and suppurating gums, with the bad oral hygiene necessarily resulting, do not add to the patient's physical health. In fact they may destroy the appetite, lead to gastro-intestinal upset, constipation or diarrhea, salivation, and foul breath, and make of the mouth, gums and teeth excellent culture media and breeding places for the germs there existing, with the possibility of chronic focal infection playing a definite rôle in relationship to anemia, lowered general bodily health, focal toxic or infective conditions elsewhere in the body, and perhaps even to the mental condition of the patient. The condition should surely receive more consideration than psychiatrists have been in the habit of giving it in the past, and oral hygiene should be a by-word among the mentally disturbed as well as it is among the mentally balanced.

BIRTH CONTROL AND DYNAMIC EVOLUTION.

In the issue of the JOURNAL for Sept. 23 we commented editorially on the first of a series of

articles on "Birth Control" by Mr. Havelock Ellis in *Physical Culture*. In the October number of this publication Mr. Ellis presents the second of his series, in which he discusses more particularly the prevalence of contraceptive methods, the justification of their use, and the responsibility of physicians with regard to their explanation and recommendation. He calls attention particularly to their adoption in the various European countries and in the United States.

"It was in France, so often at the head of an advance in civilization, that birth control first became firmly established, and that the extravagantly high birth-rate of earlier times began to fall; this happened early in the nineteenth century, whether or not it was mainly due to voluntary control. In England the movement came later, and the steady decline in the English birth-rate which is still proceeding, began in 1877. . . If we examine the latest statistics for Europe (usually those for 1913) we find that every country, without exception, with a progressive and educated population, and a fairly high state of social well-being, presents a birth-rate below 30 per 1,000. We also find that every country in Europe in which the mass of the people are primitive, ignorant, or in a socially unsatisfactory condition (even although the governing classes may be progressive or ambitious), shows a birth-rate above 30 per 1,000. France, Great Britain, Belgium, Holland, the Scandinavian countries and Switzerland are in the first group. Russia, Austro-Hungary, Italy, Spain and the Balkan countries are in the second group. The German Empire was formerly in this second group but now comes within the first group, and has carried on the movement so energetically that the birth-rate of Berlin is already below that of London, and that at the present rate of decline the birth-rate of the German Empire will before long sink to that of France. Outside Europe, in the United States just as much as in Australia and New Zealand, the same great progressive movement is proceeding with equal activity."

Mr. Ellis thus puts himself in the position of approving, even enthusiastically advocating, the practise whose phenomenal result probably constitutes one of the greatest perils and weaknesses of the nations in which it prevails. In the present European war, for whose purposes Germany essentially still belongs in the second group, the ultimate decision may well rest on the factor of numbers, on the exhaustibility or inexhaustibility of the supply of fighting men. There is no question that Germany had already begun to feel the deteriorating effects of civil-

zation in the decline of her birth-rate. It is well known that this decline has caused the gravest apprehension among German physicians and sociologists, that articles pointing out its danger have appeared in German medical journals, and that measures to combat it have been suggested and even, to a certain extent, adopted.

This attitude of the German medical profession (an attitude largely shared by the French and English, it should be noted) is quite different from that which Mr. Ellis would adopt.

"In Holland nurses are medically trained in a practical knowledge of contraceptive methods, and are thus enabled to enlighten the women of the community. This is an admirable plan. Considering that the use of contraceptive measures is now almost universal, it is astonishing that there are yet so many so-called 'civilized' countries in which this method of enlightenment is not everywhere adopted. Until it is adopted, and a necessary knowledge of the most fundamental facts of the sexual life brought into every home, the physician must be regarded as the proper adviser. It is true that until recently he was generally in these matters a blind leader of the blind. Nowadays it is beginning to be recognized that the physician has no more serious and responsible duty than that of giving help in the difficult path of the sexual life. Very frequently, indeed, even yet, he has not risen to a sense of his responsibilities in this matter. It is well to remember, however, that a physician who is unable or unwilling to give frank and sound advice in this most important department of life, is unlikely to be reliable in any other department. If he is not up to date here he is probably not up to date anywhere."

Mr. Ellis's statements in these last few sentences may be thoroughly sound, but probably hardly in the sense which he intends. That the physician should be a purveyor of the popular knowledge of contraceptive methods seems a prostitution and perversion of his special function to preserve rather than prevent life.

In conjunction with Mr. Ellis's theories may be noted also those of Mr. Casper L. Redfield, of Chicago, upon whose writings we have commented editorially in several previous issues of the JOURNAL. The burden of his contention is that human breeding, to attain the best results, should not proceed more rapidly than at the rate of three generations in a century, and that this end may be attained by the postponement of parentage to the fourth decade of life. This process of selecting the optimum period of life for reproduction (a time by no means definitely determined as yet) he terms dynamic evolution,

and he has recently published a book about it, under this title.* Rasing his assertions on the phenomena of horse and dog breeding, Mr. Redfield discusses the possibility of transmitting acquired characteristics, and the consequent preferability of procreation after such valuable characteristics have been developed.

Naturally any such method of dynamic evolution involves birth control, so that the conclusions of Mr. Redfield and Mr. Ellis come to much the same. As a matter of fact, it seems that both have again somewhat mistaken effect for cause. It is not the facts of late parentage and birth restriction which are apparently beneficial, but the improved environmental conditions which often, but not invariably or necessarily, attend them. Not late parentage or restriction, not birth control or dynamic evolution, but improvement of environment is perhaps the factor most needful at present in any attempt experimentally to better the human race.

MEDICAL NOTES.

NEW YORK ACADEMY OF MEDICINE.—The Wesley M. Carpenter Lecture for 1915 will be delivered by George W. Crile, M.D., on "The Kinetic Drive—Its Phenomena and Its Control," on Thursday evening, October 7, at the Academy of Medicine, New York City.

ONE HUNDRED THIRTY-NINE LIVES SAVED IN NEW YORK.—According to figures just issued by Commissioner Goldwater, there were 1236 deaths with a rate of 11.11 last week, as compared with 1323 deaths and a rate of 12.36 for the corresponding week of last year. This difference of 1.25 points in the weekly rate is equivalent to a saving of 139 lives. The following diseases showed a decrease; diphtheria, cerebrospinal meningitis, heart disease, Bright's disease, digestive diseases, pulmonary tuberculosis, lobar and broncho-pneumonia. The only noteworthy increase was in the number of deaths from diarrhoeal diseases in children under five. This increase was due to the warm and humid weather that prevailed last week which caused almost an epidemic of gastro-intestinal disturbances amongst young children.

Considered from the viewpoint of age distribution, there was an increase in the number of deaths of infants under one year of age and between one and five. At the other age periods there were fewer deaths than during the corresponding week of last year.

The death rate for the first thirty-nine weeks

* Dynamic Evolution. By Casper L. Redfield. New York and London: G. P. Putnam's Sons. 1915.

of 1915 was 13.43 as compared with a rate of 13.90 for the corresponding period of last year.

AMERICAN ASSOCIATION OF CLINICAL RESEARCH.

—The seventh annual meeting of the American Association of Clinical Research was held at the Hahnemann Medical College, Philadelphia, from September 23 to 25. The presidential address was delivered by Dr. Jefferson D. Gibson of Denver on the therapeutic use of the x-ray. At the session on September 24, Dr. Thomas B. Crothers of Hartford, Conn., outlined his method of treatment of drug habitués; and Dr. John M. Craig of Philadelphia reported experiments aiming to increase the utility of radium by more economic utilization of its emanations. Dr. Roger M. Griswold of Kensington, Conn., advocated compulsory medical inspection of school children and hygienic improvement of working conditions in the various industries.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

—At the recent meeting of the American Electro-Therapeutic Association, the following officers were elected for the ensuing year: President, Dr. Jefferson D. Gibson, Denver, Colo.; vice presidents, Dr. J. Willard Travell, 27 East 11th St., New York; Dr. Frank B. Granger, 591 Beacon St., Boston, Mass.; Dr. William L. Clark, 1809 Chestnut St., Philadelphia, Pa.; Dr. Sidney A. Twinch, 24 Fulton St., Newark, N. J.; Dr. William Martin, Atlantic, N. J.; treasurer, Dr. Emil Heuel, 151 West 87th St., New York, N. Y.; secretary, Dr. Byron Sprague Price, 65 Central Park West, New York, N. Y.; registrar, Dr. Frederick M. Law, 576 Fifth Ave., New York, N. Y.

INTERSTATE EXTERMINATION OF MOSQUITOES.

It is announced from New York on September 28, that Dr. S. S. Goldwater, health commissioner of that state, has established plans to organize an interstate commission for the extermination of mosquitoes. This commission is to have its headquarters in New York City with auxiliary branches in Connecticut and New Jersey. It is planned to secure the cooperation of town, county and state health officials. It is hoped that gradually the work may be extended to other states. Dr. Rupert Blue, surgeon-general of the United States public health service, has offered his approval and aid to the organization.

DECREASE OF TYPHOID IN OREGON.—In 1910, there were in Oregon 172 deaths from typhoid. In 1914 this figure was reduced to 62. While the rate for the country is from 28 to 38 deaths per 100,000 inhabitants that of Oregon for the past year was less than 9.

For comparison it is interesting to note that the typhoid rates for Boston in 1911, 1912 and 1913 were 9.1, 7.9 and 8.2 per 100,000 of population, in the later years about the same as the

whole state of Oregon, and since the rate for Massachusetts is not far from that of Boston, Oregon and Massachusetts are not far apart, with a little advantage in favor of the latter.

INCREASE OF CANCER DEATH RATE.—Report from Philadelphia on Sept. 22, states that at the annual convention of the Medical Society of Pennsylvania recently held in that city, the cancer commission of the society presented in its report data showing a marked increase in the death rate from cancer disproportionate to the increase in population. Since 1906, the report shows, the death rate from cancer in Pennsylvania has increased 23½%. "Last year the number of deaths from this cause totalled 5197 and the prediction is made that this year the number will reach 6000. The report further states that a large majority of the deaths were unnecessary and could have been avoided if health officials and physicians had been alert in recognizing early symptoms. One of the recommendations made by the commission was that the state examining boards for trained nurses as well as for physicians include among their requirements a thorough knowledge of the early recognition and early treatment of cancer. It was pointed out that the hope for reducing the number of deaths lies not in radical operations in advanced cases but in early treatment."

LOSS OF ST. LOUIS UNIVERSITY EXPOSITION.

At the beginning of the summer a medical party was sent by the St. Louis University to British Honduras for purposes of research. One member of the party, Dr. Edward Nelson Tobey, was a passenger aboard the fruit steamer *Marowijane* which was wrecked in a hurricane on Friday, Aug. 13, in the Caribbean Sea. He has not been heard from since and is believed to have perished. He was a lecturer in the medical department of the University and assistant bacteriologist of the city of St. Louis.

PREVALENCE OF MALARIA, MENINGITIS, POLIO-MYELITIS AND TYPHOID FEVER.

—The weekly report of the United States Public Health Service for September 17 states that during the week ended August 28, 23 cases of cerebrospinal meningitis were reported in Chicago, 9 cases of poliomyelitis in Cleveland and 90 cases of typhoid fever in New York. During the month of July there were reported in Arkansas 1343 cases of malaria and 138 of typhoid fever.

WORK OF ROCKEFELLER FOUNDATION IN CHINA.

—In last week's issue of the JOURNAL we noted the intention of the Rockefeller Foundation to engage actively in the promotion of medical education in China. In the third part of its annual report issued in New York on September 26, the

Foundation presents the conclusions of its commission which investigated medical conditions in China last year.

"This commission met in Peking about May 1, 1914, and spent the next four months in a thorough study of existing medical schools, hospitals and dispensaries in China, and in conference with missionaries, government officials and other competent advisers in regard to the best means of reinforcing and adding to the important work already done in the field of medical education and public health. A fifth month was devoted to the preparation of an elaborate report of the observations, findings and recommendations of the commission.

"The establishment of the China Medical Board was the result of the commission's report. Dr. Wallace Buttrick, executive secretary of the General Education Board, was appointed director of the board and Roger S. Greene was appointed resident director in China. The president of the Foundation was elected chairman of the board, and Dr. Eben C. Sage, secretary."

SALE OF RED CROSS CHRISTMAS SEALS.—The National Association for the Study and Prevention of Tuberculosis has recently issued a statement of its plans for the sale of Red Cross seals during the coming season; 200,000,000 of these seals are now being printed and prepared for distribution.

"The organization of the Red Cross seal sale this year will take in every state and territory of the United States, including Hawaii, Porto Rico, and the Canal Zone. By Dec. 1 over 500,000 workers,—men, women and children,—will be engaged in the campaign.

"The sale in 1914 broke all previous records, totaling over 55,000,000 seals, an increase of 22% over 1913. After deducting all expenses, this left nearly \$500,000 for tuberculosis work in this country. The money has been and is being expended by over 2000 different agencies who benefited from the sale in amounts ranging from \$100 or less to over \$25,000. The American Red Cross announces that it will continue its previous successful policy of charging only 10% of the gross proceeds to state anti-tuberculosis associations, hereby encouraging local work."

The Massachusetts Anti-Tuberculosis League has been appointed by the National Red Cross as the agent for the sale of Red Cross Christmas seals in that State.

"The League is anxious to have these seals sold in every community in the State, and it is ready to appoint agencies for this purpose.

Such agencies as are properly organized for local tuberculosis work will have the privilege of using 82½% of the proceeds from the sale of the seals in their locality. The League is also anxious to have clubs and other organizations, stores, etc., sell the seals with the understanding that the entire proceeds are to be returned to the League. Bear in mind that the proceeds from

the sale of these seals are used for tuberculosis work in this state.

Applications for these agencies should be sent to the office of the League, 4 Joy Street, Boston, at an early date.

Last year 1,827,982 seals were sold in this State, and the League wishes, through the co-operation of agencies and individuals, largely to increase the sale this year."

EUROPEAN WAR NOTES.

CHOLERA IN GERMANY.—It is reported that during the week ended August 21, there were three cases and one death of Asiatic cholera at Brandenburg, Germany, and 126 cases with 70 deaths among prisoners of war at various detention camps in that country. During the week ended August 28, there were two cases of cholera among civilians at Frankfurt and several among prisoners of war. Nevertheless, the cholera season has nearly passed without a serious outbreak of the disease in Germany and Austria.

DETENTION OF AN AMERICAN SURGEON.—It was reported in New York on September 24 that Dr. Hermann Fischer of the German hospital in that city, who sailed thence on September 9 aboard the steamer *Oscar II* for Copenhagen in company with three other surgeons and four nurses, forming the first contingent of the American physicians' expedition committee bound for hospital service in Germany, has been detained by the British authorities at Kirkwall, England, for lack of the necessary identification papers. It is expected that he will be released as soon as these have been forwarded from America.

GERMAN COURTESY TO AMERICAN RED CROSS UNITS.—Report from Berlin by way of London on September 23 states that the German government has bestowed medals upon all members of the American Red Cross units which have been serving in the hospitals at Gleivitz and Kozel. Similar decorations have been bestowed by the Austro-Hungarian government upon members of the American Red Cross units serving at Vienna and Budapest. At the closure of these hospitals on October 1 nearly all the members of the American units volunteered for service on the German mission to Russia to care for German prisoners in that country and in Siberia. This expedition has already left Berlin, and prior to its departure the members were given a reception by the German crown princess.

WORK OF THE AMERICAN AMBULANCE HOSPITAL.—In the issue of the *Survey* for September 18 was published a communication from the Paris Committee of the American Ambulance Hospital at Neuilly containing a statement by Dr. J. William White, summarizing the work of the Hospital since September, 1914:—

"July 18, 1915.

"At the beginning of this month the records since September last showed that there had been 109,537 hospital days. The expenses per patient per day had been reduced from \$2 to \$1.16. The number of patients had risen from 161 to 535. The ambulance (transportation) service is divided into sections. The Paris section transported during the month of May 932 wounded, at a cost of 1829.90 francs, or 1.96 francs (a little less than 40 cents) a head, a figure which I learn is the lowest yet attained in Paris.

"The total number of cases transported during the month by the various sections, including those at Dunkirk, Pont-a-Mousson, St. Maurice and Juilly, was 10,505, and the average cost per wounded man was 1.79 francs (35 cents). May was the eighth month of effective ambulance service for the hospital and up to that time they had transported 38,057 wounded.

"... I want merely to record my conviction, in fact my definite knowledge, that it (the hospital) has been run most intelligently and with that sense of a proper proportion between necessary and unnecessary economies, and of the difference between extravagance and wise liberality, which marks capable hospital management."

SUPPRESSION OF TYPHUS EPIDEMIC IN SERBIA.

—Report from Naples by way of Paris on September 22 states that Dr. Richard P. Strong, chief of the American Sanitary Commission in Serbia, was about to sail from that port for the United States. In a statement issued prior to his departure he described the situation in Serbia:—

"The situation in Serbia when the American commission arrived was grave, owing to the widespread scope of the epidemic having caused demoralization, and the lack of doctors, whose numbers had been depleted because of the war and disease. There were a few English, French, and Russian doctors working individually, but no central organization existed.

"The Americans remedied this condition, however, by appointing a central commission, headed by Crown Prince Alexander, which was given control of sanitary measures throughout the country. Having full powers, the American doctors enforced the methods that had already borne fruit in the Philippines, in Panama and elsewhere. The whole of Serbia was divided into fourteen sanitary districts, seven of which were intrusted to Americans. One of the most efficacious measures was the disinfection of the population by means of a special train carrying baths, an immense disinfecter for clothing, and cars fitted up as dressing rooms and for shaving and hair-cutting.

"By this train system hundreds of persons would have their clothing disinfected and washed in a few minutes. Thousands were reached daily in this manner, the train proceeding from station to station as fast as the

work could be done, the houses in each place visited being disinfected at the same time. All those found affected with typhus were taken to hospitals.

"The entire Serbian army and numbers of the people have been vaccinated against cholera and typhus, the vaccine being manufactured for the most part in the American Red Cross laboratory. By August last virtually all the epidemics that had been raging in the country were suppressed, and the spread of typhus in Montenegro had been prevented by adopting energetic sanitary measures."

It is expected that the majority of American physicians who have been engaged in Red Cross work in Serbia will leave that country on October 10.

RELIEF WORK OF ROCKEFELLER COMMISSION.—

The second part of the annual report of the Rockefeller Foundation issued in New York on September 25, describes the work of the Rockefeller War Relief Commission in Europe from August 14, 1914, to January 1, 1915:—

"The commission expended for Belgian relief \$1,185,146.46 and later received refunds for expenses of ships and for the cargo of the steamer *Massapequa* from the commission for relief in Belgium, \$199,107.52, making the net amount expended by the Foundation in this phase of its work, \$986,038.94. This sum purchased more than 27,000,000 pounds of flour, more than 2,000,000 pounds of rice, 2,000,000 pounds of bacon and large amounts of coffee, lard, salt, sugar, milk and new and old clothing. In addition to purchasing food, the Foundation acted for several months as the receiver for clothing for Belgium, establishing a temporary office in New York for that purpose.

"Within two weeks after the outbreak of the war the Foundation appropriated money to enable Dr. Alexis Carrel, of the Rockefeller Institute and attached to the French army medical corps, to purchase anti-meningitis serum and anti-dysentery serum as well as setting aside funds for the use of the American Red Cross in sending physicians and nurses to Europe.

"In addition to its work for the Belgians, the Foundation sent a commission of three to Europe to inquire into relief measures needed in all the countries affected by the war. This commission was composed of Wickliffe Rose, director-general of the International Health Commission; Ernest P. Bicknell, National Director of the American Red Cross; and Henry James, Jr., manager of the Rockefeller Institute for Medical Research. They visited Belgium and Holland and made a survey of the organizations for relief in those countries. The commissioners later went to Poland and Serbia and by January 1 their recommendations as to relief measures by the Foundation had been presented to the trustees for consideration.

"Another feature of the Foundation's work was an appropriation at the rate of \$20,000 a

year for those professors of scientific subjects in the University of Louvain who had been obliged to abandon their laboratories and who had been provided with opportunities of pursuing their labors in England."

WAR RELIEF FUNDS.—On Oct. 2 the totals of the principal New England relief funds for the European War reached the following amounts:

French Fund	\$17,534.18
Italian Fund	8,114.57
Red Cross Fund	1,481.61

BOSTON AND NEW ENGLAND.

WATER SUPPLY OF FALL RIVER.—The conservation of the water supply of Fall River has at last become necessary and measures are to be taken to prevent the pollution of the reservoir upon which the city is dependent for its water. Watuppa Pond, once the largest pond in the state, is now divided into two parts and the south pond has been taken for manufacturing purposes; the various mills on its banks rendering it unfit for drinking purposes. The north pond, therefore constitutes the only source of water in the peninsula in which the city is situated. The growth of population has approached the pond so closely that its pollution is imminent. To prevent this the number of brooks and streams feeding the pond will be diverted into the south pond and the forestry zone will be well protected. That the preservation of this reservoir can be accomplished is said to be easily possible at this time, although as early as 1875 the likelihood of city growth into the watershed to the injury of the water supply was discussed and the project of an intercepting drain was broached.

REGULATION FOR FOOD WRAPPERS.—Dr. F. X. Mahoney, health commissioner of Boston, has recently issued a notice to storekeepers, directing that newspapers may not be used for the purpose of wrapping any article of food. This regulation represents an interpretation of the statute which prohibits the use of unclean paper for the wrapping of food stuffs.

HOSPITAL BEQUESTS.—The will of the late Isaac H. Eddy of Dorechester, Mass., which was filed on September 22 in the Suffolk Probate Court contains a bequest of \$10,000 to the Massachusetts Homeopathic Hospital and \$5,000 each to the Home for Incurables, the Boston Floating Hospital and the Industrial School for Crippled and Deformed Children.

The will of the late Dr. George Haseltine of Haverhill, Mass., who died recently in New Jersey, contains a bequest of \$5,000 to the Hale Hospital at Haverhill.

REGISTRATION OF BIRTHS.—The department of health of the city of Boston has recently issued the following circular letter to every member of the profession in this city:—

"Your attention is called to the following:

'An Act Relative to Reports and Records of Births.'

(Acts of 1912, Chapter 280.)

'Section 1. Physicians and midwives shall within forty-eight hours after the birth of every child in cases of which they were in charge, mail or deliver to the clerk or the registrar of the city or town in which the birth occurred a notice stating the date and place of birth, giving the street number, if any, the number of the ward in a city and the family name. Failure to mail or deliver the said notice shall be punished by a fine not exceeding twenty-five dollars for each offense.'

"The reason for calling your attention to this law is that you may have all births which you have attended to date reported to the City Registrar of Boston, as after October 1, 1915, if any birth is found not reported in accordance with the above statute, the physician in charge will be prosecuted.

'Respectfully yours,

'FRANCIS X. MAHONEY, *Health Com.*

'E. W. MCGLENN, *City Registrar.*'

Obituary.

AUSTIN FLINT, M.D.

DR. AUSTIN FLINT, the distinguished New York alienist, physiologist and consultant, who died in that city of cerebral hemorrhage on September 22, 1915, was born on March 28, 1836, in Northampton, Mass., the son of the distinguished physician of the same name. After being for a time in Harvard College he withdrew to undertake the study of engineering, but soon turned his attention to medicine and in 1854 attended the medical school of the University of Louisville. Later he went to the Jefferson Medical College at Philadelphia, from which he received the degree of M.D. in 1857. Upon his graduation he presented an address on "The Phenomena of Capillary Circulation," which early showed his ability as a physician and a writer.

For several years Dr. Flint practiced his profession at Buffalo, where he became editor of the *Buffalo Medical Journal*, which had been founded by his father. At this time also he received appointments as professor of physiology in Buffalo University and visiting surgeon to the Buffalo General Hospital. In 1859 he removed to New York, where he settled in practice with his father, and was made professor of physiology at the New York Medical College. The following year he was appointed to the same profes-

sorship in the New Orleans School of Medicine. Returning to New York in 1861, Dr. Flint became one of the founders of the Bellevue Hospital Medical College, in which he served as professor of physiology from 1851 to 1898. He was also professor of physiology at the Long Island College Hospital Medical School from 1865 to 1868 and at the Cornell University Medical College from 1898 to 1906.

At the outbreak of the Civil War, Dr. Flint volunteered for service in a surgical capacity and throughout the war served as assistant surgeon U.S.A. at the New York General Hospital. In 1875 the value of this war experience of Dr. Flint was recognized by his appointment as surgeon-general of New York, a position which he held for four years. In 1891 he was decorated with the third class of the Order of Bolivar, Venezuela. He served for varying periods as visiting physician and consulting physician at the Bellevue Hospital and at the Manhattan State Hospital for the Insane.

It was through his lifelong interest in physiology that Dr. Flint was led to his particular studies in psychology and mental diseases. As early as 1863 he conducted experiments on alligators and other animals for the purpose of investigating the functions of the liver, the phenomena of circulation, especially the inhibitory action of the vagus, and the recurrent sensibility of the anterior roots of the spinal nerves. He also studied methods of determining the nitrogenous content of the blood. He was a prolific author on medical subjects, his most notable works being his several text-books on physiology and a monograph on "Source of Muscular Power." He was a member of the American Medical Association, the American Academy of Medicine, the American Philosophical Association, the American Medico-Psychological Association, the Association of Military Surgeons, and of his state, county and local medical societies. His life and work are noteworthy examples of the contributions of a distinguished American medical family. He is survived by his widow, one daughter and three sons, one of whom, his namesake, is also a physician.

JOHN EVANS SHEPARD, M.D.

DR. JOHN EVANS SHEPARD of Brooklyn, N.Y., who died on September 13 at Putnam, Conn., was born of a Quaker family at Woodland Farm, Greenwich, Cumberland County, N. J., in 1859. He graduated from Haverford College in 1879 and in 1882 received the degree of M.D. from the University of Pennsylvania. After serving as interne in the Pennsylvania and University Hospitals of Philadelphia, he began the practice of his profession at Atlantic City, N. J., where he was attending physician at the Mercer Memorial Home and at the Seashore Annex of the Friend's Insane Asylum of Frankford, Pennsylvania. In

1889 he removed to Brooklyn, where he became professor of otology at the New York Polyclinic and at the Long Island College Hospital, consulting aurist at the Brooklyn Hospital, the Jewish Hospital, St. Catherine's Hospital, and the Brooklyn Eye and Ear Hospital, instructor in otology at the New York Postgraduate Hospital and Auricular Surgeon at the Brooklyn Throat Hospital. He was a prolific author of papers in otology and laryngology and was a member of many general and special medical societies. He is survived by his widow and one daughter.

JOHN MERRICK BEMIS, M.D.

DR. JOHN MERRICK BEMIS, who died at Worcester, Mass., on September 22, was born in that city in 1860, the son of a physician. After obtaining his preparatory education at Andover Academy, he graduated from the University of Vermont and obtained the degree of M.D. from that University in 1883. He then became associated with his father, the late Dr. Merriek Bemis, in the administration of the Herbert Hall Hospital of Worcester, where he became noted for his work as a neurologist. He was a Fellow of the Massachusetts Medical Society and a member of the New England Society of Psychiatry and the American Psychological Society.

Miscellany.

THE WELSH NATIONAL SCHOOL OF MEDICINE.

IN the issue of the JOURNAL for August 26 we noted the establishment of a national medical school in conjunction with the University of Wales. The corner stone of the first building of the physiological department of this school was laid at Cardiff on August 12 by Lord Pontypridd. This new Welsh National School of Medicine had its origin in the school of medicine of the University of South Wales and Monmouthshire, which was established in 1893. As early as 1885 at the time of the annual meeting of the British Medical Association at Cardiff in that year, Dr. W. T. Edward, then president of the Association and physician to the Cardiff Infirmary, who had long cherished a desire for the establishment of a Welsh medical school, gave the sum of £1,000 for the foundation of such a school. In 1893 a further sum of £7,000 was raised for alterations and extensions of the original buildings of the school at Cardiff, and in 1894 these extended buildings were opened by Sir Richard Quain, then president of the general medical council. Since his time, instruction has been provided at this school in the subjects of the first three years of medical study, and since 1899 graduate courses have been offered to

wards the degree of doctor of public health. In the issue of the *British Medical Journal* for August 21, 1915, is presented the following further sketch of the history of this Welsh school of medicine and of the new institution by which it is to be extended and replaced.

"The first professor of anatomy was Dr. Alfred Hughes, who died during the Boer war after serving in South Africa. His memory is perpetuated in the school by a medal and by a fine anatomical museum. He was succeeded by Professor Dixon, now of Dublin, and the present occupant of the chair is Dr. Hepburn, now in command of the 3rd Western General Hospital at Cardiff. During this time Dr. Berry Haycraft has been continuously professor of physiology. During the twenty-two years 224 former students have obtained medical qualifications and have won 32 gold medals and distinctions at the University of London. They have also won 45 entrance scholarships into London hospitals.

"The council of the college has worked in cordial relation with the authorities of King Edward VII Hospital. The professor of pathology and bacteriology of the college is one of the honorary pathologists of the hospital, and is now commanding officer of the mobile bacteriological laboratory of the Welsh Army Corps; and all the work of the school in pathology and bacteriology, which has hitherto necessarily been of a post-graduate character, is done at the hospital, where the necessary rooms and laboratories have been provided by the foresight of the hospital authorities for that purpose. The department was opened by Sir William James Thomas on June 1, 1912.

"Since 1909 the college has received a grant from the Treasury for the purposes of the medical school. In 1906 the University of Wales obtained a supplemental charter authorizing it to confer degrees in medicine and surgery, but owing to the want of a complete medical school at Cardiff, students have hitherto had to go to other schools for the later subjects of the medical curriculum. In 1908 Professor Haycraft drew attention to the need for new physiological laboratories, both for teaching and research, and three years later, at the instance of Colonel Bruce Vaughan, chairman of the House Committee of the Cardiff Infirmary, a committee of the council of the college was appointed to consider the needs of the department of physiology and the comparative claims of other departments. This committee recommended that greatly improved accommodation for the medical school was required. Eventually, in February, 1913, Sir William James Thomas offered a sum of over £10,000 towards the cost of building the new department of physiology, and in the end undertook to erect the whole of the buildings required for physiology and to increase his donation to £30,000 so that the great hall and staircase for the use of the complete school

of medicine should be provided at the same time. In January, 1914, Sir William James Thomas announced that he was prepared to promise a further sum of £60,000 to provide a public health department and school of preventive medicine, together with the necessary buildings for a complete school. One of the conditions attached to the offer was that the Treasury, in addition to its present annual grant of £1,500, should make a grant adequate for the administration and maintenance of a school worthy of Wales. In February, 1914, a deputation consisting of members of the University of Wales and its constituent colleges and of other bodies interested in medical education in Wales, appealed to the then Chancellor of the Exchequer, Mr. Lloyd George, for government assistance towards the maintenance of a complete medical school for Wales at Cardiff. Mr. Lloyd George promised a substantial contribution from the Government, and a scheme has recently been submitted to the Treasury by the Welsh Educational Conference for the formation of a University of Wales Council of Medicine. The school will thus become a national institution controlled by a national body, while its administration will, subject to certain conditions, remain in the hands of the Council of the University College of South Wales and Monmouthshire.

"The new physiological buildings, with the great hall and staircase, now to be erected, form the first part of the larger scheme for the complete school of medicine. The new building will face onto the Newport Road, one of the principal thoroughfares of the city, and will be within five minutes' walk of the hospital. When completed it will measure 368 ft. from east to west. The physiological department will occupy 116 ft. of its frontage, and the hall, which will be common to all departments of the new school, 42 ft. The design, by Colonel E. M. Bruce Vaughan, F.R.I.B.A., provides a basement, a ground floor, four upper floors, and a mezzanine between the first and second floors. It will have a depth of 47 ft.

"The eastern part of the basement and ground floor will be occupied by a large lecture theatre to seat 140 students; adjacent to it will be preparation rooms and a museum. The first floor, to be devoted to experimental physiology, will contain large laboratories for forty-eight students, a smaller laboratory for advanced students, the professor's private room and private laboratory, a dark room, a departmental library, and a workshop. The second floor for chemical physiology will contain a students' laboratory with eight benches for five students each, a lecture room for small classes, a research laboratory, a private room and a research laboratory for the lecturer in chemical physiology, and store and preparation rooms. The third floor will be entirely devoted to histology and embryology. The laboratory with both top and side light will provide accommodation for 80

students, and there will also be a lecture room, a demonstration theatre, a room for the lecturer, a laboratory for advanced students, a museum for embryological and histological specimens, and preparation and store rooms. Above the third floor there will be a photographic dark room and an optical room.

"In the design of the front the need for abundance of light has been fully recognized, and the facade shows many windows. The centre and end blocks and the wide bays between are stone. The main walls will be faced with narrow red bricks joined with light mortar. The general design is English Gothic of the fourteenth century, modified by the influence of the French Renaissance architecture of the following century. The central block rises to a height of 100 ft. with side turrets, between which will be a pointed arch deeply recessed. The lower portion of the central feature, forming the portico, will be divided into three bays by columns surmounted by canopied niches to contain the statues of Hippocrates and Aesculapius. The flanking panels will contain busts of Pasteur, Lister, Hunter, and Jenner. Over the central block will be a lantern with a vane rising to a height of 150 ft. above the ground. The entrance hall will measure 65 ft. by 30 ft. and the ceilings will be panelled, showing the arms of each county in the Principality with the arms of Wales in the centre."

A NEW ANTISEPTIC.

In a recent issue of the JOURNAL we announced the reported discovery by Dr. Carrel and others of the efficacy of a mixture of boric acid and chlorinated lime as an antiseptic in wounds. It is pointed out in the issue of the *Lancet* for August 14 that this is not a new discovery, but a method of applying the already recognized and well known antiseptic properties of hypochlorous acid.

"It is a good many years since we announced from the *Lancet* laboratory that the activity of ordinary bleaching powder was greatly increased by passing through it carbonic acid gas, which liberates hypochlorous acid. Any other acid—e.g., boric acid—will do the same thing. In 1894 we investigated the Hermite process for the sterilization of sewage, which consisted in passing a current of electricity through sea-water, which was demonstrated to produce hypochlorous acid. The germicidal power of this electrolytic fluid was shown to be more than equal to corrosive sublimate; it was found to possess the advantage that it did not become inert by forming insoluble compounds with albumins, while it could be very cheaply produced. We pointed out at the same time that a practically identical fluid, except for an excess of common salt, could be produced by passing carbonic acid gas through a solution of bleaching powder. Later it was found that by adding bicarbonate

of soda in excess to bleaching powder solution a fluid was obtained containing free hypochlorous acid, although the product possessed acid-neutralizing properties due to the excess of bicarbonate of soda present. In all these cases, therefore, the 'new antiseptic' is an old and familiar friend, hypochlorous acid. It is doubtful whether bleaching powder or really neutral calcium hypochlorite has a strong germicidal value. It is not until its hypochlorous acid is set free that it becomes a powerful antiseptic, and in the methods just described certain additions are made to the bleaching powder—e.g. bicarbonate of soda or boric acid—which effect the liberation of this weak and unstable acid. When bicarbonate of soda is used the advantage is gained that all free and corrosive alkali is removed, and yet the mixture possesses acid-neutralizing properties. The bleaching properties of such a mixture are very intense, and this intensity is no doubt on a par with its germicidal power. It is well known that one of the difficulties of using bleaching powder for bleaching purposes is that its caustic properties due to lime are apt to destroy the fabric. When, however, it is employed with an excess of bicarbonate of soda a bland, non-corrosive fluid results which, while equally effective as a bleach, is free from the destructive properties described. 'A new antiseptic' therefore amounts to this: that bleaching powder or sodium hypochlorite has been primarily employed, but that the lime or soda has been neutralized by the addition of boric acid, which would liberate hypochlorous acid, which possesses only a feeble acid character. It can hardly be supposed that the boric acid contributes to the antiseptic value, since it would be present as borate of lime or of soda, as the case may be; its addition merely means the liberation of hypochlorous acid. Most probably the addition of an excess of bicarbonate of soda to bleaching powder solution would give equally gratifying results in the antiseptic treatment of wounds. Some valuable experimental observations on the antiseptic action of hypochlorous acid and its application to wound treatment were recorded in the *British Medical Journal* on July 24. The observations, undertaken at the request of the Medical Research Committee, were made by Professor Lorrain Smith, Professor Murray Drennan, Dr. Theodore Rettie, and Dr. William Campbell, and the result was to confirm the conclusion of various investigators that hypochlorous acid is the most powerful antiseptic known."

CASES OF INFECTIOUS DISEASES reported to the Boston Board of Health for the week ending Sept. 28, 1915, are as follows: Diphtheria, 41, of which 4 were non-resident; scarlatina, 17, of which 4 were non-resident; typhoid fever, 19; measles, 7; tuberculosis 67, of which 3 were non-resident. The death rate of the reported deaths for the week was 14.33.

Correspondence.

RELIEF OF DEAFNESS AND APOPLEXY.

Boston, Sept. 26, 1915.

Mr. Editor: I have just read your editorial upon Dr. Lawrence and S. Johnson. In writing about the fallacy of "broken ear drums" I found that Sir Wm. Wilde, in 1852, quoted Sir Astley Cooper (1800) as having entirely removed that fallacy! Now, in 1915, it occurs to me to note that very few physicians could correctly diagnose the cases of those of whom you have written. And even if these few could do so their statements would not be credited. However, by reaching the fountain head, it is possible to change the river's course and I venture to show you a modern method of relief from "deafness and apoplexy." In all cases of continued progressive deafness it is usual to find evidences of the effects of disease in childhood. These are opacities or scars in the m. t. These always hint at a "chronic retropharyngitis" with hypertrophied Luschka's tonsil.

Although in a few cases where hypertrophy continues late in life the patient may carry around all the germs that "flesh is heir to" upon the sticky mucus of that region, as these cannot penetrate the surface under ordinary conditions health continues. In most patients, sooner or later, the coccus of rheumatism begins developing and a slow toxicization ensues to produce from time to time the "endarteritis deformans," or the "sclerosis which precedes the apoplexies." Sometimes it is "thrombosis" at other times "embolism" and sometimes "rupture of sclerosed artery." With the local infecting processes are found all the complications which produce the "old man's bronchitis," the "clergyman's sore throat," the symptoms becoming local or reflex, or both, according to the varying character of the lesions.

In so-called heart asthma one often finds this due to an inhibitory reflex through the nose; specifically, irritation by swelling in the region of the sphenopalatine ganglia. This interesting symptom occurs during many of the normal nasal reflex phenomena, sneezing, coughing, hicough, etc. Recall what takes place when one's nose is covered by another's hand! A struggle immediately occurs to remove the inhibiting object. Imagine what an obstructed nose can do to induce the various phenomena or symptoms of asthma. In this connection I remember what part the so-called respiratory centre plays in these.

It is, perhaps, needless to write of the treatment because it would not be possible to carry this out in the very aged to the extent required by the local conditions. It is, however, easy to attempt sterilization of the nasopharynx by passing through the nose cotton-tipped probes dipped in hydrogen peroxide and whenever the kidneys are not seriously affected this should always be advocated.

I am very anxious to have some one carry out this procedure during an apoplectic seizure—either immediately or during convalescence, for if fluid can be absorbed from inflamed knee-joints in a few hours, as both Dr. Bryant and I have seen, after a sterilization of the nasopharynx, why should not similar processes take place elsewhere, as in the brain?

Very truly yours,

EDWARD D. SPEAR, M.D.

VALUE OF QUININE AS AN ANTISEPTIC.

BROOKLYN, N. Y., Sept. 22, 1915.

Mr. Editor: In the N. Y. Daily Times of Sept. 22, 1915, there appeared an article indicating the value of Quinine as an Antiseptic and Cure of Gas Gangrene, the most infectious, rapid and fatal of diseases.

I wish simply to say that for the last 15 or 20 years past I have used quinine as an antiseptic in all labor cases in my practice and have not lost a single case. I have given it a week before confinement and after, until I leave the case, a 3-gr. quinine pill three times

a day, and have proven it the best antiseptic in my practice. Yours very respectfully,

MARSHALL L. BROWN, M.D.
531 East 23d Street.

SOCIETY NOTICE.

MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS.—Meeting at Boston Art Club, Oct. 8, 1915, 8 p.m.

1. Dr. J. E. Goldthwait, Boston, "Industrial Disabilities That Can be Relieved by Orthopaedic Measures."

2. Magnus Alexander, General Electric Company, "Corporations and the Injured."

3. Dr. W. Quincy Clark, Worcester, "What One Corporation Does for Its Injured."

4. Dr. Francis D. Donoghue, Boston, "What Germany Does for Its Crippled."

JAMES H. STEVENS, M.D., Secretary.

NOTICE.

Members of the medical profession are invited to attend the Ether Day address by Dr. William Williams Keen, subject, "The Dangers of Ether as an Anesthetic," on October 16, 1915, at 4 p.m., to be held in the lower out-patient amphitheatre on Fruit Street, Massachusetts General Hospital.

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE WEEK ENDING SEPT. 25, 1915.

CONTRIBUTIONS.

The Norfolk County Medical Society, Norfolk, Va.	\$28.00
Carroll County Medical Society, Wolfboro, N. H.	10.00
Muskegon County Medical Society, Columbus, Ga.	14.00

Receipts for the week ending Sept. 25.....\$ 52.00
Previously reported receipts.....7814.84

Total receipts 7866.84
Total disbursements 7310.04
Balance 556.80

F. F. SIMPSON, M.D., Treasurer,
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE WEEK ENDING SEPT. 25, 1915.

Sept. 21, Surgeon W. B. Grove, detached, *Arkansas* to home, wait orders.

Surgeon J. C. Pryor, detached, *North Dakota*, to *Arkansas*.

P. A. Surgeon P. S. Bossiter, detached, *San Diego* to *Colorado*.

P. A. Surgeon H. W. Cole, detached, *Colorado* to *San Diego*.

Asst. Surgeon C. I. Wood, detached, *Colorado* to *San Diego*.

The following Asst. Surgeons M.R.C. have been ordered to Naval Medical School, Washington, D. C., for course of instruction:

R. H. Lhamon, G. B. Shields, G. B. Taylor, F. C. A. Gibbs, John Harper, R. H. Miller, G. C. Wilson, R. J. Trout, W. A. Vogelsang, H. C. Weber, G. W. Taylor, W. J. Rogers, V. H. Garson, E. M. Gendreau, F. M. Harrison, J. P. Owen.